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ABSTRACT

The articles in this scrapbook present a global perspective that is both alarming and hopeful. Drawing from Southern and Northern experiences the articles describe a world in crisis, but they don't stop there. By critically examining the status quo, the articles attempt to get to the roots of the crisis, and then move onto describing avenues for change and stories of hope and success. This scrapbook, one in a series, focuses on the particular issue of food. Subtopics include hunger, famine, cash crops, soil, agribusiness, diet, food from the sea, hunger in Canada, the Canadian farm, food irradiation, women and agriculture, and alternatives and solutions. Many of the essential elements of positive development are highlighted throughout: sustainable economics and resource management; community empowerment; respect for human rights and dignity; and the recognition of the role and status of women. Following the readings is a section of teaching ideas and activities to guide the users through further examination of the ideas which the articles present. Individual sections of the scrapbook can be used on their own, or in conjunction with others. Users are encouraged to read with an open mind, a willingness to learn, and a desire for change that is both environmentally sustainable and socially just. (Author/SG)

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# the FOOD SCRAPBOOK

A Collection of Articles on Food Issues for use in Secondary Schools

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Global Issues Reading Kit #2: Food
Revised in 1992

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# the FOOD SCRAPBOOK

A Collection of Articles on Food Issues for use in Secondary Schools
Global Issues Kit #2 of a five kit set.
Revised 1992 — with Activities and Ideas to accompany the articles

Edited by Andrew Gage and Sandy Ockenden
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# ABOUT THIS SCRAPBOOK

The articles in this scrapbook present a global perspective that is both alarming and hopeful. Drawing from Southern and Northern experiences the articles describe a world in crisis. But they don't stop there. By critically examining the status quo, the articles attempt to get to the roots of the crisis, and then move on to describing avenues for change and stories of hope and success. Many of the essential elements of positive development are highlighted throughout: sustainable economics and resource management; community empowerment; respect for human rights and dignity; and the recognition of the role and status of women.

The readings are followed by a section of teaching ideas and activities. These are designed to guide the users through further examination of the ideas presented in the articles.

Individual sections of this scrapbook can be used on their own, or in conjunction with others. Users are encouraged to read with an open mind, a willingness to learn, and a desire for change that is both environmentally sustainable *and* socially just.

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# TABLE OF CONTENTS

## What is Hunger?


1. **Questioning Hunger: who, what, where, when, why & how?** p. 1
   A quick overview of everything you wanted to know about hunger.

2. **A World in Jeopardy?** p. 2
   A series of answers about food issues, based on the popular television game show. The questions to go with the answers are found on page 5.

3. **The Hunger Remains** p. 2
   Despite the heroic efforts of hundreds of thousands, hunger in the Third World is still a daily reality for a half a billion people. Why?


## Famine


1. **Famine — Real Causes, Real Solutions** p. 6
   OXFAM-Canada takes a look at some of the most frequent questions they get asked about famine.

2. **Food: Grain of Hope** p. 7
   Which countries in Africa currently need food aid, and how much is needed?

3. **Africa without famine: Small producers hold the key** p. 10
   The solution to famine may be in giving the people the ability to help themselves.

4. **Nature's cruel grip tightens on peasant farmers** p. 12
   A Case Study: Nature and war are both responsible for food troubles in Mozambique.

5. **Liberians look to self help in famine crisis** p. 13
   A Case Study: When food aid in Liberia was not getting to those who needed it, it was the people themselves who took action.

6. **Infotainment** p. 14
   We often only hear about a famine when it is too late. Why is the media so reluctant to report on starvation?


## Cash Crops


1. **Who is Juan Valdez?** p. 16
   Juan Valdez, the Columbian Coffee picker, is a familiar image on coffee commercials, but, if he exists, what is his life really like?

2. **Cocoa Addicts** p. 18
   A Case Study: Our addiction to chocolate is influencing how people live in Ghana and other Third World countries.

3. **Bleak Prospects for African Coffee Growers** p. 20
   Coffee prices are continuing to drop, hitting many African countries hard.

4. **Working for Peanuts: tracing the development of trade in Senegal** p. 20
   The history of the peanut trade in Senegal, from colonisation to present times.

## Soil, Irrigation and Water

1. **Squandering the Soil** p. 22
Soil has been described as a nation's most precious resource, since food supply depends on it.

2. **Save Our Soils** p. 23
Erosion is quickly depriving us of the 11 percent of the Earth's land that is arable.

3. **Irrigation: Progress and Setbacks** p. 24
Irrigation is responsible for much of the success of the "Green Revolution", but it also poses a major threat to the environment and food production.

4. **A view of water that assumes too much** p. 25
The North has advised developing countries to use irrigation in ways that are completely inappropriate for the water-scarce South.

## Agribusiness: Green Revolution to Biotechnology

1. The Age of Industrial Food p. 26
Food production has changed within the last century from the traditional farm to farm corporations.

2. **Agribusiness** p. 27
What does agribusiness mean? How are companies getting more and more control of food production?

3. **The Green Revolution in the Punjab** p. 28
The Punjab, in India, is often held up as an example of how the Green Revolution can increase food production. The reports of its success, however, may be exaggerated.

4. **Beyond the Green Revolution** p. 32
The green revolution has had some problems and made some advances. Where is agricultural research going from here?

5. **Farmers who cultivate diversity** p. 33
The worldwide trend is to standardized crops, with a relatively small number of varieties being used. Some Third World farmers, however, are working with scientists to rescue and improve traditional varieties.

6. **Are Hazardous Wastes Fed to Crops** p. 35
A farmworkers union researcher proposes a scary thought, pointing to the close connections between toxic wastes and pesticides.

7. **Deadly Exports** p. 36
Every year pesticides that are illegal in the North are exported to Third World countries where they poison workers and the environment, and are used to grow crops for the First World.

## Diet

1. **What Canadians are Eating** p. 37
Statistics Canada reports on what has changed in the average Canadian meal over the years.

2. **Eating simpler foods is good for the planet too!** p. 39
Our food choices have an impact on the environment and on the world's food security.

3. **Prime Cut!** p. 40
Three major reasons to consider a vegetarian diet

4. **What's the Beef and Who Pays?** p. 41
Facts and Figures about the impact of cattle on the environment.

5. **Livestock are the best recyclers on earth** p. 42
And a response from Canada's beef industry.

## Food from the Sea

1. **Bounty of the Sea** p. 44
Fish is a major source of animal protein around the world.

2. **Stop the Predators Killing Canada's Fish** p. 45
The government, foreign fishermen and seals are responsible for the depletion of Canada's East Coast Cod stocks, according to the Canadian Fishermen, Food and Allied Workers Union.

3. **Who had Cod for Dinner?** p. 46
Animal Rights supporters deny that the seals have anything to do with the low levels of cod, claiming instead that overfishing is responsible.

## Hunger in Canada

1. **Food Needs in Edmonton**
Who is going to food banks in Edmonton? p. 47

2. **Food Relief in Toronto** p. 49
What are the problems facing food bank users in Toronto?

3. **Inner-City Hunger** p. 49
A visit to one of Toronto's food banks.

## The Canadian Farm

1. **The Price of Profit: are we trading away our food security?** p. 51
Are Multinational Corporations and free trade are taking away Canada's ability to grow its own food?

2. **Index on Farming** p. 52
Facts and Figures about the Canadian Farm.

3. **Plowed Under** p. 53
Low prices, due to subsidies, are threatening to drive Canadian farmers out of business.

## Food Irradiation

1. **Background to an Issue: Food Irradiation** p. 54
What questions need to be asked about Food Irradiation.

2. **Food for thought in a world of hunger and disease** p. 55
Food irradiation's may be able to offer the world several benefits, such as reducing food-borne disease and food spoilage.

3. **A bad idea whose time has come** p. 56
On the other hand, the process may produce cancer-causing free radicals and reduce vitamin content in foods. Also the industry is not quite sure if it will tell consumers which foods have been irradiated.

## Women and Agriculture

1. **The Market Economy and Rural Women** p. 57
Women do much of the agricultural work in the world, and yet receive little of the credit or economic benefit.

2. **Women's know-how: the untapped source** p. 58
Past development projects failed because they excluded women from agricultural planning.

3. **Gaining Ground** p. 59
Women in Kenya are fighting to gain control of their land.

4. **Land Tenure** p. 61
Land ownership separates the rich from the poor and men from women.

5. **Credit schemes emphasize community of women** p. 62
The Grameen banks and other community banking schemes are allowing the poor, particularly women, access to the income they need to improve their situation.

## Alternatives and Solutions

1. **If we declared war on hunger...** p. 63
Compared to what the world spends on the military, the cost of reducing hunger is a bargain.

2. **Sustainable Agriculture: The ecological alternative** p. 64
Farmers are now facing the challenge of abandoning their chemicals and adopting sustainable agriculture.

3. **Making the transition to organic farming** p. 65
The Bauml family of Saskatchewan tells about how they converted to organic farming.

4. **Eco-farming in China Brings Green Profits** p. 65
Eco-villages in China are approaching self-sufficiency.

5. **Africa's Silent Revolution** p. 67
Across Africa Peasant organisations are increasing productivity and quality of life.

6. **Agriculture in Ladakh** p. 68
Agriculture has been practiced sustainably in Ladahk, India, for thousands of years and continues today.

7. **Waiting for change: 8 ways to help build food security** p. 70
Eight things that you can do in your community to help the world's food situation.

**Activities and Ideas** **p. 71**

# WHAT IS HUNGER?

## *Questioning hunger:*
### *who, what, where, when, why & how?*

Graphic: Africa Fax: VIDEA

**WHO?** Hungry people are poor people, those who simply cannot afford a nutritionally adequate diet. Estimates of how many are hungry range from 500 million to 1 billion people. Poor people aren't all the same, but statistically they share a number of common traits. In the developing world, the poor are overwhelmingly illiterate, which links their access to information and ideas that could help them escape poverty; they are often distinct in race, tribe, or religion from dominant wealthy groups; they are slightly more likely to be female than male; and they are much more likely to be children (of the 20 million people who are believed to die each year from hunger-related causes, 14 million are children — 40,000 every day). The profile of poverty in Canada reflects similar patterns: People with literacy problems are twice as likely to be unemployed as other adults, and many times more likely to receive social assistance; poverty is worse among natives than it is among the rest of Canadians; families led by women are more than four times more likely to be poor than families led by men; and 17.6%, or 1 in 6 Canadian children are poor.

**WHAT?** Hunger is a food intake below the minimum energy requirement for a healthy body and a healthy, active life. (The average adult needs 2000-2700 calories a day.) The short term health effects of hunger are not severe. When allowed to continue over a long period of time it becomes under-nutrition — a chronic state of hunger that results in diminished physical and mental development, weakness, susceptibility to disease ... and even death.

**WHERE?** While the worst cases are in the developing world, hunger is also evident here in Canada. The Canadian Association of Food Banks predict that 2.1 million Canadians will need emergency food assistance in 1991.

**WHEN?** Hunger is not a new phenomenon. Some would argue that there has always been hunger and there always will be. Yet in the decades following the Second World War, concerted international efforts actually reduced substantially the percentage of people who were hungry and poor. In the past decade however, the rate of improvement in some countries has stalled while the situation in others has become even worse. Since 1980 malnutrition is on the rise, life expectancy is falling and infant mortality is up in many 'developing' countries. On the whole, 43 developing nations in Africa, Latin America and Asia finished the decade poorer. Even in rich countries like Canada, poverty increased during the eighties. The wildfire growth of food banks is testimony to that fact. Edmonton was home to the first in 1981; today there are 1200 emergency grocery programs and 500 meal programs in 250 communities across the country.

**WHY?** If people go hungry in Canada it is certainly not for lack of available food. Less obvious but just as true, is the fact that every year, world harvests produce more than enough food to meet the nutritional needs of every human being on Earth. Yet 57,000 people die every day as a result of hunger. Why? Because they are poor. People are poor because of grossly inequitable distribution of land and wealth, and because they lack the political power to change how resources are directed.

**HOW?** Can hunger and poverty be overcome? As the true experts on poverty, poor people around the world have banded together to develop creative solutions to improving their lives. Despite their successes, the challenge of ending poverty requires more than a piecemeal approach. Governments of all nations must explicitly direct resources towards aiding the people who need them most. Massive changes are needed to make the economies of countries, and especially the world as a whole, more equitable.

Sources: State of the World's Children 1991, UNICEF; "World Hunger 1989", FAO; State of the World 1990, Worldwatch Institute; "Presentation to House of Commons Sub-Committee on Child Poverty, 1991", Canadian Association of Food Banks.

Reprinted from the World Food Update 1991

# ??? A WORLD IN JEOPARDY ???

THIS IS A WORLD IN JEOPARDY. Six categories test your knowledge of hunger and poverty issues. A World in Jeopardy provides the answers; you are challenged to ask the questions. (For example, in the category 'Environment', the answer might be: "This has a hole in it larger than the United States." The correct question would be "What is the ozone layer?") While World in Jeopardy may bare a resemblance to a certain tv game show, it is no trivial pursuit. The winner doesn't get to keep the cash; the runners up don't win prizes. What players do get is a provocative introduction to some very complex and urgent issues facing our world. No one can expect you to have all the answers. The best strategy for a world in jeopardy is to ask the right questions.

See Page 5 for the Questions to these answers.

| Numbing Numbers | The Poverty Trap | Women & Development | Who Owes Who? | Food Aid, Band-Aids, & Lemon-Aid | Action |
|---|---|---|---|---|---|
| This condition afflicts between 500 million and 1 billion people | In many Third World countries, 5% of the people own 75% of this | 40% in Latin America, 60% in Asia and 75% in Africa | Developing nations owe this much to banks and governments in industrialized countries | There are more of these in Canada than outlets of any single grocery or restaurant chain | Increasing this decreases birth rates |
| 33 billion dollars over the next 20 years | This results in more deaths in Canada each year than Cancer | From 14 to 18 hours a day | 200 billion dollars a year | This resulted when a few rock stars decided to do something about world hunger | These cut costs by buying and preparing food in bulk |
| A third of a million children go blind every year for lack of this | For lack of this, the poor have no energy to work, for lack of work, they have no money to buy it | In 1985, this many more boys than girls were in primary and secondary school | Industrial country trade barriers cost developing nations this much money every year | Welfare rates across Canada fall anywhere from 16% to 78% below this | This bank loans money to peasants |
| 17 million hectares a year | Children from low-income families are more than twice as likely to do this than are other kids | 65.7% in 1986 | 95 developing countries spend more servicing their debt than on these two basic services | Projects financed by this international body forcibly displaced 23,000 people from Singrauli, India | This group successfully fought a $50 cutback to welfare recipients in B.C. |
| 1.5 million in 1990 | One in four adult Canadians is this | Two out of three governments didn't have any in their executive councils in 1985 | UNICEF calls them "a rearranging of the furniture inside the debtors' prison" | Despite an austerity program, the government of Cote d'Ivoir built a larger than life replica of this | Ensuring that all people at all times have both physical and economic access to the basic food they need |

Reprinted from World Food Update 1991

# THE HUNGER REMAINS

Despite the heroic efforts of hundreds of thousands, hunger in the Third World is still a daily reality for half a billion people.

Benjamin Franklin once said there is nothing certain except death and taxes. If he was still alive he might be tempted to add Third World hunger to this list. More than half a billion people are under-nourished today, and their ranks are swelling every year.

The problem goes far beyond how much food is produced. Since the 1970s, enough grain has been grown to feed everyone and then some. Although most of the surplus comes from North America and Europe, dozens of poor countries are also food exporters. Yet, Third World hunger persists, both in the 'self sufficient' nations and elsewhere.

To end hunger, we need to sever its social, political and economic roots. For hunger is a product not only of bad harvests, but of wars, of injustice, and of getting priorities in the wrong order. Let's examine these causes in more detail, starting with the hungriest place on earth.

The last decade was in many respects a lost one for Africa. Per capita grain production fell by more than 10%. Meanwhile, population levels increased by 3% a year. The net result is, one in three Africans go to bed hungry.

Against this backdrop of daily misery, famine is a frequent visitor. In 1985, two million Africans perished. Hundreds of thousands have died in every year since then. And, this spring, aid agencies warned that more than 29 million lives in Sudan and other countries were hanging by a thread.

African famines typically follow droughts. Despite this, many aid



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experts believe they can be prevented. If it weren't for military campaigns and related factors, the impact of uncooperative weather would be small. Consider Ethiopia, which bore the brunt of the 1985 famine. During the 11 preceeding years, civil war raged between rebels in Eritrea, a northern province, and government-led forces. Endless fighting took an incredible toll on agriculture, as farmers were uprooted and crops destroyed. Meanwhile, the government poured money into huge state-run farms, which fed few peasants but kept soldiers' stomachs full.

When the rains failed, it was the last straw. Poor people died by the hundreds of thousands. The toll would have been even higher if not for an outpouring of generosity from around the world. Rock stars alone raised almost $300 million in relief supplies. But getting food to the needy proved difficult. About 70% of famine victims lived behind rebel lines. On several occasions, the government prevented grain from reaching them.

FACT FILE

One two-thousandth of the world's grain harvest could save all those who die of hunger and related causes.

This year's crisis features the same plot, but a different cast. Sudanese troops are fighting a rebel army. The country has run out of food. And both sides in the dispute are seizing food relief shipments. To add insult to injury, less than half of Sudan's farmland is currently under cultivation.

War brought hunger to several other African nations during the 1980s, including Mozambique, Angola, and Uganda. And the mere threat of war had a negative impact too. Many governments spend as much or more on outfitting their armies as they do on agricultural development. It's likely this trend will continue as long as bread is scarce; because, just as wars cause hunger, hunger causes wars. The more unhappy people are, the more support there is for revolution. This is especially true on a continent where dictatorships far outnumber democracies.

About the only cause for optimism is the Cold War's demise. For several decades, the United States and Soviet Union used Africa as a weapons testing ground. Billions of dollars in arms were supplied to 'friendly' dictators. Now that the two superpowers are on speaking terms, the number of arms shipments may decrease.

But, even if peace breaks out tomorrow — an unlikely scenario — it will take years to get food production back on track. One reason is debt. During the 1970s, the Third World borrowed heavily from western lending agencies to finance development. Then, in the early 1980s, a global recession sent interest rates soaring. Cash-strapped nations found themselves owing more and more to foreign lenders. Between 1980 and 1987, Africa's total debt ballooned from $120 billion to $250 billion.

This ground further development to a halt. Many nations slashed social programs to the bone. And, to earn the foreign exchange necessary to pay down their debts, they became more export-oriented. Africa increased the amount of land devoted to 'cash crops' such as coffee, cotton, and peanuts. That meant there was less land available for growing the food Africans actually eat.

Higher prices enticed farmers to make the switch. But, it was a change many would later regret. To ensure decent harvests, fields planted with cash crops need to be watered, fertilized, and sprayed with pesticides. Many poor farmers cannot afford these 'agrichemicals' yet try to grow the plants anyway. The problem is, when denied fertilizer, cash crops quickly rob soil of nutrients. Land becomes useless, even for growing food.

Farmers who can afford agrichemicals, or can get loans to buy them, face different headaches. Over the past few decades, the cost of pesticides and fertilizer has risen faster than the price farmers can get for their crops. In other words, profit margins have declined steadily. To maintain the same standard of living, cash-croppers are forced to cultivate more land by swallowing up neighbouring farms.

In the long run, this will lead to more disasters. Africa becomes less able to feed itself with each passing year. And fertile land becomes concentrated in the hands of an elite few. For the sake of debt reduction, Africa's poor lose their main meal ticket.

What can be done to reverse this trend? The most radical idea is to cancel the continent's debts. If the world pretended they never existed, Africa would feel less pressured to export crops. Not surprisingly, this solution goes too far for most bankers. But, they have shown support for 'debt relief' schemes such as the Brady Plan. Invented by, and named after, the U.S. Treasury Secretary, the Brady Plan encourages banks to write off some of their Third World debts. In return, they receive guarantees that interest will be paid on the balance.

Another remedy is to remove existing trade barriers between the Third World and its customers. North America, Europe, and Japan currently levy duties on imported foods such as roasted coffee and cocoa powder. But in their unprocessed form, coffee and cocoa can freely cross borders. This system ensures Africa loses out on profits. A lot more money is made by food processors in wealthy countries than by the farmers who supply them. If trade barriers came down, developing nations could put more effort into canning coffee and less into growing it.

In the meantime, African agricultural policies could stand some fixing. In most nations, farmers are unable to earn a decent living growing food. As a result, there's rarely a surplus. One of the few exceptions is Zimbabwe. Since 1980, its government has raised the price of maize, a staple food, several times. It has also offered credit to poor farmers. Together, these incentives increased maize yields from 80,000 to 800,000 tonnes a year. And, although one in five people are still hungry, living standards are improving. A 1987 health survey in Zimbabwe showed that 6% of newborn children were underweight, down from 15% in 1982.

Other countries might be persuaded to follow Zimbabwe 's example if the political risks weren't so high. Elsewhere, low food prices have been the norm for decades. Raising them would only make enemies of Africa's urban elite, who hold the balance of power. New Internationalist magazine puts the dilemma this way: "Starve the city dwellers and they riot; starve the peasants and

they die quietly. If you were a politician, which would you choose?"

For their part, African leaders accuse the rich Western nations of making the situation worse. We are too generous with food aid, they argue. Free food is welcome during a crisis. But at other times, it hinders development efforts. African farmers can't compete with overseas shipments, so their fields lie fallow.

This does not mean we should ignore Africa between its famines. Peasants may resent us for sending them our leftovers, but they do appreciate other types of assistance. Basically, any tools that help them produce more food with less effort, cost little, and don't harm the environment, are high on their wish lists.

While Africans wrestle with food production, the main problem in Asia is access to food. In the 1960s and '70s, the region posted tremendous gains in agriculture. Several nations were transformed from food importers into exporters. And famine was virtually eliminated. But the situation is still far from perfect. In many poor countries, the number of hungry people keeps increasing.

For example, in India, more than 300 million people don't get enough to eat. (This is more than all the hungry Africans combined.) Assuming a population growth rate of 2% per year, the total will be 350 million before the decade is out. Yet India is considered self-sufficient. It produces surplus rice and wheat most years.

It's the same story in the Philippines and Indonesia. Both nations grow more rice than they need, and both have problems distributing it. Two out of three Filipinos are underfed, while in Indonesia, young children suffer greatly. Half are underweight. One in ten dies before age five.

All three countries owe their surplus grain, and at least some of their distribution woes, to the 'Green Revolution.' Three decades ago, scientific visionaries believed they could end hunger by developing 'high-yielding' varieties of wheat and rice. In some respects, their dream was fulfilled. The new super-seeds easily out-performed traditional varieties. Wherever they were planted, farmers reaped record harvests.

## DATA BANK

Percentage of personal consumption spending that is spent on food
by Canadians: 12.1
by Australians: 15.8
by Americans: 8.4
by Sudanese: 63.5

Number of Canadians needing emergency food aid
in 1991: two million
in 1990: 1.45 million

Number of people each month receiving food from Toronto's Daily Bread Food Bank
in 1983: 35,000
in 1991: 120,000

Number of new food products introduced each year in North America: 14,000
Number of these products likely to still be available in supermarkets 25 years from now: 0

Percentage of all food produced in North America that goes into the garbage: 20

Average amount spent weekly on groceries in Canada by people living
alone: $57
per person in two-person households: $37
per person in larger households: $29

Approximate value of goods sold through grocery stores in Canada each year: $40 billion

Number of countries in the world with Gross Domestic Products of less than $40 billion: 128

Percentage of the Earth's surface that is suitable for growing crops: just under 10

But, there's more to this story. For best results, Green Revolution seeds, as with cash crops, need pesticides and fertilizer. Also, many of the new varieties were designed to be harvested by machines. That suited rich farmers, but the poor were left behind. They couldn't get loans to buy agrichemicals. In the long run, they just couldn't compete.

In effect, a development project aimed at defeating hunger ended up ruining the hopes of many hungry people. Unable to make a go of it, some peasants sold their farms to wealthy landowners and corporations. Peasants renting farms, meanwhile, faced steeper rents because the land they worked was worth more to speculators. Migrant workers also suffered as tractors and combines took over their jobs. Millions of them left rural areas to try their luck in over-crowded towns and cities.

Clearly, higher food production alone is not the solution to poor people's woes. But what is? According to some experts: land reform. People are hungry because they lack opportunities to feed themselves. They're underemployed or they don't own land. Why not play Robin Hood, and take from the rich to give to the poor?

This concept is most appealing in nations where social injustice prevails. In the Philippines, for example, the tax rate for poor people is higher than for the rich. And the wealthiest 20% of the population owns 80% of the land. Not surprisingly, the poor demand a better deal. One group is asking the government to distribute lands gained illegally by former president Ferdinand Marcos.

Land reform is also an issue in Bangladesh, a nation of 117 million in an area the size of southern Ontario. Today, 3% of all households own 29% of the farmland, while 60% own nothing. This disparity stems in part from the Green Revolution, but it's also a result of natural disasters. Every time there's a serious flood or cyclone, food becomes scarce and thousands of peasants, in desperation, sell their land to survive. Of course, having done so, the odds of hunger returning again are higher.

In China, the poor have no land to lose, and may be better off for it. Chinese peasants tend plots owned by the state, which pays them for producing a certain quota. Farm families can then keep or sell any excess food. This system, built on a massive land reform experiment in the 1950s, efficiently feeds more than a billion people. The government rations what it collects. And, there's usually surplus food

available at local markets.

None of this was achieved easily. In the early days, crop failures were common and millions of people starved. But successive governments kept plugging away. They introduced famine relief programs, improved the distribution of food, and supplied the poor with fertilizers and high-yielding seeds. What's more, they continue to adjust their policies whenever necessary.

The same cannot be said of Latin America. Over the last 10 years, the region made no progress towards ending hunger. Today, more than 50 million people there are undernourished. Although this is less than in Africa, in many respects the situation is just as serious.

The main cause for concern is land use. Today, three out of four countries in the region rely on food imports. At the same time, food leaves Latin America at a tremendous pace. Ten nations, including Argentina, Colombia, and Costa Rica, get more than half their export dollars from food. Canadians and Americans sometimes eat more 'local' produce than the locals.

How did this trend develop? As in Africa, it was a combination of skewed official priorities and honouring debts. Governments encouraged farmers to export produce, and so they did. Between 1960 and 1980, for example, Central American beef exports increased from 18,000 tonnes to 100,000 tonnes a year. When interest rates climbed, even more beef had to leave the region. Of course, less land was available for feeding the poor.

But, governments aren't the only ones to blame. Drug dealers operating in Colombia, Bolivia, and Peru are also part of the problem. More and more, they're recruiting peasants to cultivate coca plants to produce cocaine and marijuana. Again, that means fewer food crops are grown. Many peasants find this troubling, but can't pass up low-interest loans, a stable market, and premium prices for their 'crops.' Nor are most governments helping the situation. They're spending more on drug enforcement than on agricultural development.

So, what should they be doing? Policies that might help include fairer prices for food crops and easier access to credit. But, more importantly, Latin America needs land reform. In Brazil, 10% of the farms occupy 80% of the arable land. Six million peasants are landless. And, the environment suffers, as a result. How? Frustrated Brazilians trek to the Amazon. They clear rainforest and plant crops. Soon, the farms fail as soil erodes and nutrients wash away. Only the hunger remains.

**SUGGESTED ACTIVITIES:**

1. Find out how Canada's foreign aid budget is spent. What proportion is food aid? What proportion is agricultural assistance? Who are our favourite recipients?

2. "Starve the city dwellers and they riot; starve the peasants and they die quietly. If you were a politician, which would you choose?" So says New Internationalist magazine. Discuss the options.

JOHN EBERLEE

Reprinted with the permission of Canada and the World Magazine [Oct. 91], Oakville, Ontario.

## WORLD IN JEOPARDY: The Questions to the Answers

(See Page 2 for an explanation)

**NUMBING NUMBERS**

1. What is Hunger? *(State of the World 1990, Worldwatch Institute)*
2. What is the cost of not helping low-income children in Canada stay in school? *(Senate report on Child Poverty, 1991)*
3. What is Vitamin A? — A 2¢ Vitamin A capsule every six months could prevent it. *(State of the World's Children 1991, UNICEF)*
4. What is the rate of deforestation in the tropics? *(FAO)*
5. What is the number of people in Canada who used food banks at least once? *(Cdn Assoc. of Food Banks)*

**POVERTY TRAP**

1. What is land? *(Exploding the Hunger Myths, Food First)*
2. What is poverty? *(Ontario Medical Association — submission to the Ontario Social Assistance Review Committee, January 9, 1987)*
3. What is food? *(Worldwatch Paper 92, Worldwatch Ins.)*
4. What is drop out of school? *(Canadian Fact Book on Poverty, 1989)*
5. What is functionally illiterate? *(Southam Survey of Literacy in Canada, 1987)*

**WOMEN & DEVELOPMENT**

1. What is the percentage of agricultural work done by women? *(World's Women Data sheets, UN 1985)*
2. What is the average work day of women in the Third World? *(World's Women Data sheets, UN 1985)*
3. What is 80 million? *(Women: A World Survey 1985 — Ruth Savard)*
4. What is the poverty rate in Canada among single parent families headed by women? *(Canadian Fact Book on Poverty 1989)*
5. Who are women? *(Women: A World Survey, 1985)*

**WHO OWES WHO?**

1. What is 1.3 trillion dollars? *(State of the World's Children 1991, UNICEF)*
2. What are the interest payments on that debt? *(State of the World's Children 1991, UNICEF)*
3. What is 50-100 billion dollars — due to lost sales and depressed prices? *(Third World Guide 91/92)*
4. What are education and health care? *(World Development Report 1989, World Bank)*
5. What are Structural Adjustment Programs?

**FOOD AID, BAND-AIDS & LEMON-AID**

1. What are food banks? *(CAFB presentation to House of Commons Sub-Committee on Child Poverty, 1991)*
2. What was Band Aid?
3. What is the poverty line? *(National Council of Welfare)*
4. What is the World Bank? *("Probe Alert" - May 1990, Probe International)*
5. What is St. Peter's Basilica?

**ACTION**

1. What is education of women and girls?
2. What are collective kitchens?
3. What is the Grameen Bank?
4. What is End Legislated Poverty?
5. What is food security? *(FAO definition)*

**What is Hunger?** 5

# FAMINE

## Famine

**Real Causes — Real Solutions**

**QUESTIONS AND ANSWERS ABOUT FAMINE**

Famine in Africa: the images are terrifying. Emaciated bodies, sunken eyes, swollen bellies, people clambering for food rations or lying weakly, waiting for death. This is the spectre we saw on our TV sets in the fall of 1984, 1987 and again in 1989/90.

From remote villages in the far north to the hearts of our cities and towns, Canadians reached deep into their pockets to give what they could to relieve the suffering. Through OXFAM-Canada alone, over $3 million was donated.

At the same time, people started asking questions. Wasn't there a severe famine in Africa just ten years ago? Why are people still starving? Why don't they help themselves rather than waiting for disaster to occur? Why don't African governments help their own people? Why doesn't all the food aid we send make a difference?

In an effort to help Canadians find these answers, OXFAM-Canada is undertaking an educational campaign on the causes and solutions to famine.

OXFAM-Canada is tackling the underlying causes of poverty and hunger by supporting groups organizing for fundamental change and progress in the Third World. Our work with our partners in Africa, Central and South America, and the Caribbean, is based on the belief that disasters such as famine are never simply accidents of the weather or history. They are part of a pattern of underdevelopment which exists throughout the Third World. But important changes occur when people identify and attack the roots of their own problems. This is where your support, and OXFAM-Canada's, is so important.

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***Question One:*** *Why are people going hungry in Africa and elsewhere when we have so much here?*

> "As a relatively new parent it was with horror that I watched the dying of children whose only difference to mine was that they had the misfortune of being born in a land where there are not the abundances we have here." —B.Z., Vancouver, B.C.

Rich countries, poor countries... what do we have here that they don't have there? It is not so much that we have more resources, as it is that we control more resources. Corporations based in the United States and Europe control the bananas, cocoa, palm oil, coffee, cotton, and other goods that the Third World produces for export. These corporations get more of the profits from sales than do the producers. On a smaller scale local elites also benefit at the expense of the vast majority of their people. Many Third World countries are producing more raw materials than they were twenty years ago. But in an international economy they don't control, they often get less and less in return. Prices they receive for their exports may vary widely, but the prices for manufactured imports from industrialized countries constantly increase. In an effort to increase export income by producing more, land used for growing local food crops is planted with cash crops.

At the same time, Third World governments borrow money to survive. Africa's foreign debt mushroomed from $5.7 billion to more than $51.3 billion between 1970 and 1983. Many African nations now spend as much as 50% of their foreign exchange on the interest payments of their debts. Governments with the best policies and intentions are caught in this squeeze. Unless some of the rules governing the global economy are changed, Third World countries will continue to face debt problems. The question then becomes: who has control of what, and at whose expense? Poor countries may have more to begin with. But their wealth in land, people, and raw materials is exploited to benefit rich countries, large corporations, and the international trade and monetary systems.

***Question Two:*** *Does sending food aid really help?*

> "Dear OXFAM: This money is so people who are hungry can buy food... I wanted to send some food in a big package, but my mommy thought if we send some money they could buy food with it... Maybe they could put some in the bank, so they can buy groceries later...' —Michael, age 4, Brooks, Alberta

If people are hungry, give them food: so goes the logic. Effective food aid, properly administered and distributed, does save lives. However, food aid is no substitute for food self-sufficiency. An influx of foreign food can do a lot of harm. Local food preferences may change, leading to less demand for local crops. Imported food may be cheaper than locally grown food, forcing local farmers out of business. Communities come to rely on imported food, and, with little incentive to grow food, their own food production may drop to danger-

ously low levels.

It is important to ask who really benefits from food aid. Donor countries may have huge food surpluses to dispose of as well as political motivations for offering help. Recipient countries may have political or economic considerations in accepting the aid. The food aid received may be withheld from the poor by local elites. The people themselves are often starving in the first place because they are the victims of systematic economic exploitation.

No amount of food aid will change the problems which cause hunger to begin with, or ensure that people who are hungry today will not be hungry tomorrow. Most poor people in underdeveloped countries want nothing more than access to land and tools so that they can grow their own food. Rather than waiting for a famine emergency and sending food aid, it makes more sense to support appropriate long-term development schemes which encourage people to become self-reliant.

## Food

Grain of hope

Coalition casualties in the Gulf war were counted in tens; Iraqi casualties in hundreds of thousands - but millions of Africans face death by famine this year. Twenty million people are at risk on the continent, according to aid agencies. As part of its aid efforts Oxfam UK has sent a ship, 'The Grain of Hope', loaded with enough grain to feed 265,000 people for one month. But this is not nearly enough. Governments need to pledge - and deliver — food urgently to the following countries:

**Ethiopia**

Six million people at risk, plus 150,000 refugees from Somalia.

Total food requirements are 941,593 tonnes. 671,376 tonnes still need to be pledged. Pledges made by the US Government and the EEC not yet confirmed.

Politically the prospects for a successful relief operation are better now than for many years, provided food is delivered and donors ensure all routes are fully utilized.

**Sudan**

Over seven million people at risk. Total food requirements are 1,129,000 tonnes. By February only 19,500 tonnes of relief food had been delivered out of 102,000 tonnes pledged.

Disagreement between the Government of Sudan and the donors over the scale of the problem and food distribution plans is holding up pledges. Oxfam believes that, given purchase and shipping times of at least three months, donors must not wait for the distribution plans to be put into place before committing food.

**Mozambique**

Nearly two million war-displaced people lack enough food, as do people in the cities. The shortfall of food aid amounts to more than 60,000 tonnes. Attacks on grain convoys by the rebel Mozambique National Resistance have virtually stopped grain movements.

Donors do not appear to be responding speedily or positively to needs, as agreed by the UN in December.

**Malawi**

Three million people hit by drought. The Government is appealing for 77,000 tonnes of food. Malawi hosts about one million refugees from Mozambique. Angola Drought and war have placed 1.9 million people at risk of starvation. Agricultural production has been reduced by 75 per cent; over one million people have fled their homes in rural areas threatened by fighting.

**Liberia**

Over one million people are displaced due to the civil war and require food. Six thousand tonnes of rice are needed every month but only 3,000 tonnes are being delivered.

**Somalia**

Relief needs will be ascertained only when order is established.

Reprinted from the *New Internationalist*, May 1991

***Question Three:*** *Do drought and poor weather conditions cause famine?*

> "It is important to help people deal with the major tragedies they face as a result of natural disasters... Here is my donation to assist those who are starving because of the drought in Africa."
>
> — S. W., Winnipeg, Manitoba

Blaming famine on the weather has one great advantage — we don't have to look for human causes. It's easy to say that people are starving just because of bad weather and their own inability to look after the land properly. Drought alone does not cause famine. Natural catastrophies such as drought always affect the poor and powerless most. Better-off people seldom starve to death, even in the midst of the most severe drought. It is no coincidence that the millions of people who starve to death each year are already locked in poverty. Traditional ways of coping with dry years have often been changed. To earn foreign exchange, some Third World governments have encouraged small farmers to grow cash crops. People who use their land to grow cash crops can't grow as much food for their own needs. Even in good years, food surpluses can't be accumulated to see communities over the bad years. Once drought hits, people sell their tools and animals to buy food, and many even eat their seed stocks to survive. As a consequence, two or three years of drought leads to starvation, and even if rains come there is nothing left with which to start again. Droughts are part of the natural weather cycle. They may not be preventable but famine is. Policies that encourage cash crops and discourage local food production, programs that ignore the role of women in food production, projects that emphasize large scale farming — all of these lead to the growing vulner-

ability of poor people in rural communities. Together with agricultural policies that do not involve people in their own development, droughts are merely one ingredient in a recipe that spells disaster. War: War is the other major cause of famine. There must be peace in order for development to take root. Long-term solutions to natural disasters cannot happen when bombs and rockets are falling around you.

***Question Four:*** *Doesn't over-population cause famine, and shouldn't family planning be introduced to prevent famine from happening?*

> "The attached cheque... is to assist people in Africa... Does OXFAM address the problem of overpopulation through birth control? Such a policy is urgently needed worldwide...."
> — R.C., Halifax, N.S.

While rapid population growth is a problem in many Third World countries, a sudden decrease in population would not end hunger. In fact, there does not seem to be a direct correlation between high population density and severe hunger and poverty. For example, India has an average of 568 people per square mile; Holland, where hunger is unknown, has 1,117. Sub-Saharan countries of Africa, long prone to famine, actually have 2.5 acres of cultivated land per person. Agricultural exports from these countries increased during the late 1960's and early 1970's at the same time that famine was getting worse.

Third World parents want and love their children just as we do. And they don't like to see them go hungry. But poor families may feel they need many children because children provide valuable labour in the struggle to survive. Children may be sent out to work at an early age to earn additional income, or they may work at home and tend younger children, so the parents can work. High infant mortality also encourages couples to have more children so that at least a few will survive into adulthood. This is important because social assistance programs are often non-existent and children provide financial support for their aging parents.

Canadians used to have large families, too. But family size has declined as economic security and educational opportunities have increased. This will happen in the Third World when poor people gain control over their own lives and resources. Once economic security improves, when people have work, better wages, improved living conditions, and better education, birth rates will decrease.

Over-population in itself does not "cause" famine, but poverty, the result of exploitation, does. Blaming famine on over-population is simply another way of shifting the burden of blame onto poor people themselves.

***Question Five:*** *Will Third World people ever be able to feed themselves?*

> "I would... like to think that OXFAM is also contributing to the long-term problem of co-operating to assist African people to produce and distribute sufficient food to meet their needs." — K.G., Ottawa, Ontario

All over the world, poor and powerless people are working hard to gain access to resources and education so they can look after themselves. Countries like Nicaragua and Mozambique are striving towards self-sufficiency after struggling for political independence against overwhelming international pressures. In countries like Chile and El Salvador, or colonies still fighting for independence like Eritrea, mass organizations have taken the initiative in improving health care, access to education, and food self-sufficiency. In a world where an estimated 500 million people are suffering from malnutrition, such attempts at self-reliance deserve strong international support.

Globally, there is more than enough land to grow all the food needed to feed everyone. Reports estimate that less than half of the arable land is currently being farmed. But farmland in Third World countries is often monopolized by local elites or multinational corporations. In some countries, over 70% of the population is landless because large corporations have taken over so much of the land for cash crops.

In some countries, over 70% of the population is landless because large corporations have taken over so much of the land for cash crops.

Where land and resources have been redistributed, an important side effect has been the increased energy and commitment of people who know that their labour will benefit themselves and not someone else. The peasants, the landless, the exploited themselves, must have an active role in reshaping their society. In Nicaragua, for example, the rural poor have participated in land re-distribution, the formation of co-operatives, literacy and health care programs, and the growing of basic food staples. They're transforming their nation after decades of hunger and poverty. In Eritrea, in the midst of the worst famine in years, peasant associations in the villages are forming co-operatives to share tools and improve their agricultural practices.

OXFAM-Canada is working in partnership with these energetic and committed people to prevent famine and encourage self-reliance. Through projects which involve poor farmers, women, and workers, a successful struggle against poverty and hunger is taking place, one in which every Canadian can be involved.

*Question Six: What can we do to help?*

"I wish to do more as well as send money. It is so frustrating when countries all over the world spend so... much on bombs, fighterjets... and so many die in front of us... We are angry... and sad..."

— M.H., S.F., S.M., Kingston, Ontario

Here's what you can do:

**1. Learn more about the true causes of famine and question old myths about underdevelopment.** You can look at the list of resources included here to find the books or information you need. Then you can share this knowledge with your family, friends, and coworkers to increase their support for hard-working people in the Third World.

**2. Organize a public meeting or a study group in your community organization, church, or union to look at the causes of hunger and increase public awareness.** It is also important to stay informed as parents about what information your children receive in school about famine and underdevelopment — teachers will welcome discussions and suggestions for resources. OXFAM-Canada resource people will be happy to help you inform yourself and get organized. Contact your nearest OXFAM-Canada office.

**3. Find out about Canadian aid policies and make your views known.** Question your Member of Parliament on his or her party's stand on development and food aid. Ask how our government's policies support or undermine the struggles of Third World people. Ask to what extent the aid which Canada gives is determined by political priorities which may aid the rich more than the poor. Write to the Prime Minister or the Minister of External Affairs and ask for their views. Show your concern about how your tax money is used for overseas development work.

Photo: Oxfam Canada

**4. Struggles for food in Third World countries frequently become political struggles.** This is because people are often hungry as a result of exploitation by the rich and politically powerful. OXFAM-Canada joins many other groups in encouraging solidarity work to support these struggles for a fairer sharing of resources. The Coalition for Aid to Nicaragua and many other solidarity and aid groups have local chapters across the country. Here again your local OXFAM-Canada office has the information.

**5. Local volunteer committees of OXFAM-Canada are working across the country to arrange educational and fundraising events.** You would be welcome. Why not call your local OXFAM office and enquire about getting involved.

**6. It is vital to offer financial support to organizations which work directly with people in the Third World to improve living conditions and prevent famine.** The support of Canadians for the work of OXFAM-Canada with its development partners in Eritrea and Tigray northern Ethiopia, has made a tremendous difference in the lives of thousands affected by famine. People are growing vegetables, harvesting grains, and building farm terraces in an effort for self-sufficiency, with the help of OXFAM-Canada and its supporters in Canada.

OXFAM-Canada has been supporting projects for self-sufficiency since 1963. Our administrative costs are less than 10% and 80% of our program budget goes directly to development work. The other 10% is used for fundraising. Your support for us ensures that real progress is being made in the struggle against poverty and famine.

FAMINE — Real Causes, Real Solutions reprinted from the Oxfam—Canada publication of the same name.

# Africa without famine:
## small producers hold the key

"It is generally agreed that the main hope of expanding African agricultural production lies with the small producer."
—the Honourable David MacDonald, Canadian Emergency Coordinator, African Famine, 1986.

Famine in Africa. The images of its weak, despairing victims are frightening. The emaciated bodies and swollen bellies of children waiting for death bring tears to even the most hardened observer. We saw these images on the nightly news in 1984 and in 1987. This year, we are seeing them again. Many of us are left with an impression that Africa's situation is hopeless, its people past the point of helping themselves. We would certainly greet claims that Africa was once and could again be capable of producing enough food for everyone on the continent with suspicion. Many who know this vast and diverse continent well, however, tell a different story.

**PRE-COLONIAL AFRICA**

Many agricultural specialists argue, for example, that less than a hundred years ago, African farmers regularly produced adequate food for normal consumption and a surplus for trade, ceremonial use and storage. There were exceptions. The slave trade and war disrupted food production at various times. Chronic drought could leave fields parched for long periods of time. However, community structures handled these situations in creative ways to reduce suffering and starvation. Trade, storage and migration generally prevented disasters. But essentially, it was a deep knowledge of local environments, combined with innovative farming methods, that provided the basis for adequate food supplies in pre-colonial Africa.

European occupation of African countries in the late 19th and early 20th century contributed to a decline in nutritional levels. Serious food shortages occurred and re-occurred. Colonialism wore at the basis for African food security in a number of important ways. Two stand out.

**SHIFT IN PRODUCTION**

The first was the shift in agricultural production from serving internal needs to meeting external, colonial demands. Taxes were imposed on households. In order to pay, people had to produce crops which the colonial authorities or traders with ties to European business were willing to buy. The shift to the production of these cash crops was too often at the expense of overall food production. And the money farm families earned from the sales of these crops was frequently inadequate to purchase food on the open market.

**INDIGENOUS KNOWLEDGE IGNORED**

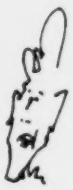
A second important factor was the slow attack on the way families and neighbours worked together in their communities. Patterns of sharing and land use were ignored as was the knowledge of local farmers about the environment and about crops that suited local growing conditions. Also ignored was the role that African women played in food production for local consumption. With cash crops the priority and a man's domain, women were increasingly denied access to the

Photo: Oxfam—Canada

good land and other resources needed to produce food for the family.

The departure of men a find work on settler estates, on mines or in towns also hindered their ability to feed their families. Again, such outside income was needed to raise money to meet taxes. Little was left over for the family. With many of the men away, women bore double and triple workloads. Needless to say, they were unable to devote enough time to home gardens.

**"Whew! And we're wondering why the African nations are having so much trouble with their economies."**



Graphic: The Africa File, VIDEA

**INDEPENDENCE**

Independence from colonial rule did not mean an end to food insecurity. Several very complex factors have worked against that goal. These include: international trade patterns which weaken African efforts to build strong national economies; conflicts arising out of the arbitrary drawing of national boundaries by colonial authorities; corruption amongst government elites; the political isolation of governments trying to develop alternative, non-Western models of development for their people; development programs designed by or with foreign aid agencies which continue colonial patterns; and the export of African agricultural and mineral goods, or commodities, at the expense of food for local consumption.

The situation of Mali, a country in Africa 's driest region, the Sahel, offers a telling example of export production at the expense of food for the people. During a period of drought in the 1970s. Mali increased its production of groundnuts for export by 25% and tripled its cotton harvests. However, the revenues from these commodities did not cover the price of food imports... food required, in part, because land for food was turned into land for cash.

**EXPERTS DISAGREE**

There is disagreement amongst development experts about the role of export or cash crops in reducing food security. Some also reject too strong a blame on the colonial legacy for the impoverishment of many African countries. For example, Africa's population has exploded since the colonial era and many scientists wonder whether traditional agricultural practices could have been adapted to meet the needs of today's population. Perhaps the answer is that we will never know because Africans never had a chance. And few can dispute the fact that many foreign and government development initiatives have not succeeded in assisting poor people grow strong and self-reliant.

Still clearer is the small the fact that small food producers — women and men farmers across the continent — have generally not been listened to. Their knowledge of the land and analysis of what needs to be done has been undervalued for too long by those "in comfortable places". Indeed, more often than not, large foreign aid projects have eroded their ability to feed themselves.

African farmers at the "grass-roots" have had enough. They are calling for an end to development models which appear to favour a small elite. And they are working hard on continued agricultural programs they consider much more appropriate to their needs. In Zimbabwe, Mozambique, and Zambia, for example, farm families, with the help of African scientists, are conserving and enhancing local seed and plant varieties more suitable to local growing conditions and local needs than types received from abroad. This "Seeds of Survival" program aims to increase crop yields of more drought-resistant local varieties without costly inputs — fertilizer and pesticides. These farmers are determined to build a future without famine. It is time for "outsiders" to recognize and appreciate the "real experts", so Africa can be a "breadbasket" for its people, not the subject of Western pity.

Adapted from "Bread for the World", by Bill Rau, Food Monitor. Spg/Sum. 1988. No. 44. Also consulted: Lindsey Hilsum. Unicef News, #120, 1984: Audrey Chapman, Crossworld, Vol. 12 #2. Winter 86/87; Susan George, How the Other Half Dies, Penguin, 1979; Famine: Real Causes, Real Solutions, Oxfam Canada. 1987: "No More Famine"- Report by the Hon. David MacDonald, Canadian emergency Coordinator, 1986; and materials from USC Canada.

Reprinted from the World Food Update 1991

# Nature's cruel grip tightens on peasant farmers

BY HUGH McCULLUM
Special to The Globe and Mail
Maputo

MOZAMBIQUE is brown this year, a dull, dusty brown, at a time when it should be green. Seen from the air, broad rivers look like meandering dirt highways.

Stunted trees with sparse, yellowed leaves barely break the monotony of the dusty plains.

Even now, when the weather should be cool during southern Africa's winter, the daytime heat is searing.

In the southern province of Gaza, one of the continent's mightiest rivers has vanished. Rudyard Kipling's "great, grey-green greasy Limpopo," which provides Gaza with its water, is so dry that children have marked out soccer fields in the middle and people have built houses where water streamed by last year.

If the rainy season had come to southern Africa this year, the tens of thousands of peasant farmers in Gaza would have harvested rice, corn and vegetables enough for themselves with plenty left over to sell.

"The harvest is almost 100 percent failed," said Peter Simkin, the avuncular United Nations special co-ordinator for emergency relief operations in Mozambique.

The worst drought in living memory is putting southern Africa in a spot much like Ethiopia's, Mr. Simkin said. At least four million out of a population of 15 million require emergency food aid this year. Last year, the number was half that.

Mozambique's plight is more extreme than that of any other country in the region. At least one million people have been killed since 1976 in one of the world's longest wars, another million are refugees in neighbouring countries and more than 2.5 million are displaced in their own country.

The nation has been ravaged by the Mozambican National Resistance (known by its Portuguese acronym, Renamo), a rebel group set up by white Rhodesians and supported by South Africa in a drive to destabilize the Marxist Mozambican government. Renamo, notorious for its terrorist attacks on civilians, controls large areas of the countryside and has made travel by road unsafe.

Because of the war, Mr. Simkin said, UN and other agencies will be doing well to reach half those in need.

A convoy from the International Committee of the Red Cross that tried to get food to the Limpopo Valley was attacked by rebels and burned, the food stolen.

When people tried to take their cattle to market in Xai Xai, a nearby town, the animals died before they could get there.

When Angelina Mondlane visited her grandparents recently in Chokwe, another town in the valley, their distress and helplessness brought tears to her eyes.

"They are old and they have nothing to eat. No one has anything to eat. They boil cacana leaves and make a kind of bitter tea. It takes away the hunger, but it doesn't make you strong."

Her grandparents sleep in the bush each night for fear of Renamo attacks. Their clothes are in rags. She does not think they will live another month if she cannot get them to the relative security of Maputo.

"There are thousands like that," she said.

Mozambicans have an eloquent way of raising their palms and shrugging, not out of lack of interest but in helplessness.

"What can we do?" Ms. Mondlane says. "We can only try to bring them to the city, but peasants don't like to leave home. The city is foreign. They have to buy food and they have no money, none of us do."

Her father, a Presbyterian pastor, said he reads about the Earth Summit in Rio de Janeiro in the newspaper. He does not understand it all, he said, but there is something wrong with the weather. He points to his yard, where a cashew tree is starting to bloom. "It thinks this is summer, not winter, it's so hot."

Inside his house, sweat drips from everyone during a season that usually is temperate in the daytime and cold at night.

"I think it needs a scientist to explain it," he said, launching into an explanation of his own.

"You can't separate the war from the drought. I think one [the war] has to be stopped and peace negotiated before we can stop worrying about starvation."

He said the older people think their ancestors are angry "at all the blood that has been spilled, all the guns that are in this country." Officials estimate that as many as one million automatic rifles are loose in Mozambique.

"When we read the newspapers we know it is pollution that has caused our drought, caused our people to die," Mr. Mondlane said. "People agree with that because this has never happened before. We've always had small droughts but never like this in my whole life."

Renamo-held areas may be even worse off than government-held areas. Red Cross convoys that occasionally get into those areas say peasants wear old grain sacks and scratch the ground with sticks to try to plant crops.

"They've gone back to the stone age," said Felice Dindo, ICRC representative in Maputo.

Their survival instincts astonish aid workers, said Macumeque Chauque, president of the Union of Co-operatives in Chokwe. "When the donors visit our areas, they're astonished that we're still alive."

The toll is rising, however. Many children have kwashiorkor disease, the protein deficiency that causes rusty-coloured hair and swollen bellies. Adults are terribly thin, often giving what little food they have to their children.

Water sources are so far away that women in parts of Manica province walk a full day to get water, sleep overnight and walk back the next day carrying tins or pots on their heads, often with little to eat.

Greg Keast, a Canadian from Sudbury who works as a water-projects officer for

Unicef, said people in rural areas know of wells they could use but cannot reach them because of the war.

He said rainfall in the past decade was well below the average for the previous 100 years, and groundwater is badly depleted. Like many technical experts here, Mr. Keast is not optimistic about the future without much larger programs to secure a water supply.

A donors conference sponsored by the UN and the Mozambique government in Geneva this week pledged $626-million (U.S.) for food aid.

Mozambique will receive almost 1.4 million tonnes of food to try to survive the drought, but its effects will be felt until the end of 1993 even if normal rainfall occurs from October to April. Canada contributed 61,000 tonnes of wheat last year, 50 per cent of Mozambique's requirements.

It is difficult to obtain statistics on the impact of the drought because Mozambique's infrastructure has been so damaged by the war.

Unconfirmed reports from the provinces of Naica, Sofala, Gaza, Tete, Maputa and Inhambane indicate that about 500 have died from drought and drought-related diseases, but the figure could be much higher.

The cost of delivering emergency food is as much as $1,500 a tonne — far more than the actual cost of the corn — if it is sent by air. Roads are mined and cratered, bridges have been blown up, and ambushes occur regularly. The ICRC has lost 17 trucks this year.

It is not so much a shortage of emergency food — "the donors are quite generous this year," Mr. Simkin said — it is getting the food from the ports to the people. He said donors should make sure the convoys are properly guarded by providing food for the Mozambican military escorts.

"You can't really expect soldiers who don't get paid regularly or fed properly to defend food convoys."

Preparing for next year is another nightmare.

The starving peasants have lost their primitive tools to Renamo raiders and have been forced to eat their seeds.

Now, said Yvon Madore, a Canadian project officer with Unicef, when the planting season comes in a few months, "there'll be nothing to plant and nothing to plant with."

Reprinted from the Globe and Mail, June 10, 1992

## Liberians look to self help in famine crisis

By Ellin Bessner in Monrovia

In the shade of the scoreboard at the Boy Scouts basketball court in Gardnersville, displaced and returning Liberians stood in line, anxious to receive their rations of rice and vegetable oil. It had been six weeks since the last distribution reached the capital, but the Liberian volunteers distributing the food were hoping to take care of all 6,000 ration-card holders by nightfall. Much of the credit for this well-functioning distribution system rests with the Special Emergency Life Food (SELF), a Liberian non-governmental organization. With emergency food supplies provided by the UN's World Food Programme (WFP), it operates some 170 distribution points around Monrovia, feeding nearly 900,000 people hit by the Liberian civil war. The UN had launched its relief operation toward the end of October 1990, after a cease-fire saw the West African peacekeeping force, ECOMOG, establish a security zone around Monrovia. SELF was born during the last desperate days of the siege of Monrovia. "We had to do something or we'd starve," says Dorothea Diggs, the founder of SELF. "People were eating grass."

UN officials and local political figures had approached Mrs. Diggs, who was well known for her work with refugees. She and her colleagues soon mobilized 3,000 people to handle the food distribution. "The first consignment was only enough to feed 200,000 people. "We decided to target children," she said.

Through a WFP incentive programme, Liberian men were recruited and divided into teams to unload food shipments. Each member of the team doing the most work received a bonus of five cups of rice, as well as the regular food ration.

SELF's early distribution operations were fraught with problems. In the warehouses, men would wear two pairs of trousers and stuff their pockets and shoes with rice. Rebels once stormed the SELF compound, making off with 700 bags of rice. Enumeration lists were inflated with "ghost houses."

Eventually, SELF tightened up its processes, using computerized lists and instituting workshops and training seminars for staff. By January, as each new food consignment arrived, more and more volunteers elected from the neighbourhoods took over responsibility from SELF for distribution.

Recently, to handle the growing number of returning refugees, 13 New Arrival Reception Points (NARPs) were opened at strategic entry points around the capital. In six weeks the NARPs vaccinated and issued ration cards to 20,000 returnees.

With the political and military situation in Liberia deadlocked, and nearly all the country except Monrovia behind rebel lines — including its rich agricultural lands, rubber plantations and iron mines — the city's economy remains stagnant. Consequently, the WFP has approved an extension of its emergency food aid programme for another year, committing nearly 200,000 additional tonnes, worth $92 mn, until 1992.

"The city runs on rice," comments Richard Snellen, the WFP's emergency coordinator in Monrovia. With rice worth $1 per cup in the local markets, it was used as payment to encourage residents to participate in city-wide clean-ups. They swept up the broken glass and the bullet cartridges, fashioned makeshift power generators out of car batteries and dredged the harbour. Despite the general political uncertainty, in Monrovia at least the crisis is easing.

Reprinted from Africa Recovery, September 1991

*Why does African famine only hit the headlines when it is too late? Who decides when a disaster is a disaster? Peter Stalker comes up with a new name for the editors and journalists of TV news - storytellers.*

# Infotainment

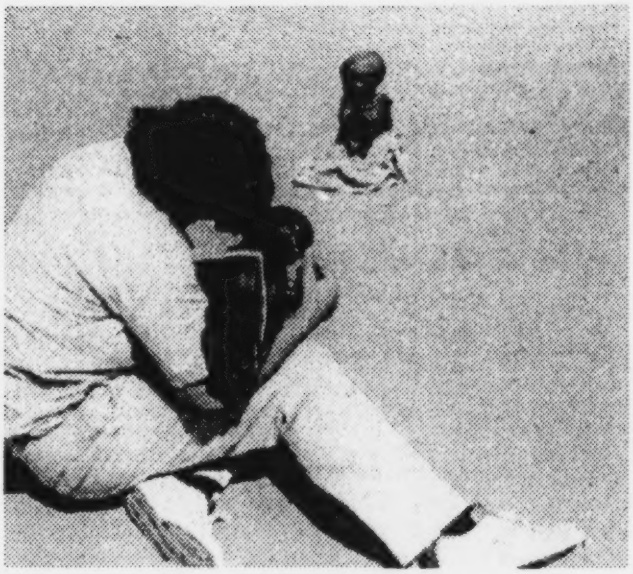


Photo: Wendy Wallace

'A DISASTER is only a disaster if it appears on TV,' said a Red Cross official in Geneva recently — lamenting that the much-televised refugee Kurds seemed to merit a Wembley concert, though the African famine might have had a more pressing need for funds. But why don't all such disasters get the same treatment on television?

After four decades of TV news reporting we are no closer to accepting that it is founded on a fiction. This is the myth of information: the idea that there is, outside our consciousness, a collection of facts floating around which diligent newspeople gather and sift on our behalf. These facts are then fired at us with maximum momentum so that, like sharp and polished bullets, they impact dramatically on our consciousness. But facts are nothing like bullets. Indeed it may make more sense to assume that facts don't really exist at all.

A simple enough clue comes from the word itself. A fact is something which is made — as in a factory. It doesn't arise spontaneously and have an independent existence. Facts are things which humans make to describe the world around them.

Say you visit Peru and find out about the cholera epidemic there. On your return you will want to talk about it. You might even remember some statistics which help you sound authoritative. But you won't want to bore people. So you will probably try to recount your experience and talk about people you met. And you will discuss things other than cholera. The climate, perhaps, or the extraordinary number of people who wear tracksuits, or the opulence of the Miraflores district of Lima. All this time looking at your listener to gauge if you are creating the intended impression.

The facts that you would include are really the elements of a story. Indeed it is impossible to have facts without a story. Information has to fit into some context or it is meaningless marks on paper, or vague vibrations in the air. Television works in much the same way. Its facts may seem more objective, coming from remote authority figures — rather than from a friend whose powers of judgment you are in a good position to evaluate (and doubt). But the process is the same — storytelling.

TV stories, like any other, have to have a plot and at least one character. So there are heroes and eccentrics, villains and victims. There is no escaping this. Thus President Bush may be portrayed on the news as the heroic leader of Desert Storm, or the cynical politician who lured the Kurds to disaster. He cannot appear with no role, otherwise his appearance would be meaningless. This dramatic element is not merely some bias or twist which unscrupulous presenters add afterwards. It is absolutely necessary to comprehension. Without it there is no story.

But TV news telling is crude. The tales have to be simplified and stylized because of the limitations of the medium. For one thing, communication is entirely one-way and inflexible. Reporters can only guess at the viewer's state of mind; no chance of changing tack in mid-sentence if they detect a lack of comprehension or interest. So the stories have to follow accepted patterns. Villains and victims have to be established as unambiguously as possible.

**Sunsets are unsuitable**

Disaster reporting, for example, has its own conventions. People who are in trouble should not be shown smiling, though they may well do so out of politeness. And curious neighbourhood children should certainly not be allowed to grin at the camera since this makes reality look very confusing. People who are ill should look ill on the screen. Their families should preferably be weeping. It doesn't matter if there is a beautiful sunset. Cut!

Once a suitably edited disaster has been pulled down from the satellite it can be added to the general flow. While one channel reports on the Bangladesh cyclone others might be showing a man beating his wife in *LA Law*, or a soccer report showing a nasty foul, or even Lady Macbeth wandering around with a bloody dagger. And with a zapper at your finger- tips you can idly hop from one to another and come away with much the same mixture of shock and boredom from each.

**A world of its own**

This flattening process is a peculiar characteristic of television. You'd be rather disturbed in real life if such things popped up in front of you in quick succession, but on TV this is normal; it is expected. TV may seem to offer a window on reality but it is actually a world of its own.

You may well protest that you watch the news to find out what is happening in the world. But don't be so sure. Try to remember what was on last night's news — Don't try to guess what must have been on it. Recall the actual items. Surveys of people watching the news show that at least half of those questioned immediately after the bulletin can remember nothing at all of what they have seen. Once a news report has served its primary entertainment function we discard most of it.

The central aim of the news is to keep the viewer serviced with entertaining images — 'infotainment' is the current buzzword. Programmes tend to follow a certain pattern. Like a Beethoven symphony they often start with a crashing chord, either musical or vocal, to shake the viewer out of apathy and raise anxieties which only continued viewing can resolve. The stories are played out, jumping rapidly from one to the next to maintain the sense of urgency. Then at the end calm is restored, the world's problems have been explained to us and we are assured that everything is all right really. To make sure that we feel all right they finish up with soothing trivia about animals or royalty, a joke between the presenters and a contemplation of eternity in the form of a weather map.

But what should go into the show between the dramatic opening and the soothing resolution? 'News value' determine the content. True enough. But since news value seems only to indicate merely 'the kind of thing which appears on the news' this doesn't get us very far.

Importance, maybe. That's difficult to measure. Even if you took needless and culpable loss of human life in your own country as your criterion you would finish up with a bulletin which was little more than a daily litany of road accidents and lung-cancer victims to which the car and cigarette companies would certainly object.

No, news is what makes a good show. TV storytellers try to judge what will excite the viewer, partly by following their own nose and partly by following the herd. One persistent demand is that news should be new. But this criterion is generally met in the most trivial sense. Most news stories refer to a continuous process; what may be new is that someone has talked about it today, although this is usually referred to as 'issuing a statement' — which makes it sound more like a fact.

Novelty is even more contrived when news editors have merely chosen to broadcast something on a particular day. The Ethiopian famine of 1984 is one of the clearest examples of this.

Warnings of impending catastrophe started to appear in 1982 yet were largely ignored. Coverage only started when a British TV crew in Ethiopia (not a news crew, and not the BBC) came back with footage of the refugees at Korem. They went to the UK voluntary agencies who were able to use it to launch a joint TV appeal in July 1984. The BBC decided that it too should have footage so reporter Michael Buerk rushed in and out. The appeal was quite successful. But the BBC did not consider the story very significant and used it midway through a bulletin.

The disaster only hit the headlines at the second attempt. This was on the initiative of local camera operator Mohammed Amin of the Visnews agency (who had vainly been reporting on the story for some time). He was to go with a BBC radio reporter. But at the last minute Buerk also hitched a ride since BBC TV might be interesting to see how the appeal money had been spent. The team discovered that this was not the story at all — the real point was that the situation had got dramatically worse. The radio reporter was able to transmit this information while the crew were still in Ethiopia — but his report was largely ignored.

When Amin's film with Buerk's commentary arrived at the BBC it was a slack news day. As the BBC's John Simpson put it: 'We could have led with any of a handful of stories... in the end it was decided to try an imaginative lead'. So the 'biblical famine' finally became a British TV disaster. Visnews also offered Amin's film to NBC in New York. Initially they turned it down. Only pressure from their London bureau caused them eventually to run the story as the last item on the nightly news.

'The effect of the NBC report was electrifying,' says Robert Lamb, who was filming at the UN at the time. 'Suddenly the New York Times and other papers were running front-page stories. From nowhere the crisis in Africa became the lead item on the agenda at the General Assembly.'

**A call for modesty**

The BBC seems to claim a lot of credit for telling this story, but in retrospect its role was as muddled as everyone else's. Television proved itself incapable of communicating until it had a tellable story — in this case when the body count was high enough. And even then it happened half by chance. This was not because of a lack of facts — the famine was out there all the time. Nor of knowledge, since even the journalists knew about it — they just didn't think it would make good television or that viewers would be interested. They were proved dramatically wrong on both counts.

The real problem with TV news is that it promises too much, and we foolishly expect it to deliver. A bit more modesty on the part of broadcasters, and much more scepticism from viewers, would restore a bit of sanity. There are many other sources of information to which governments and the UN might sensibly pay more attention; in the case of disasters the voluntary-agency people on the spot are usually the most reliable.

The daily papers are also a much better source of information. Yet they do not claim to be the news; they mostly have distinctive names like *The Globe and Mail*, *The Age* or *The Independent*, implying that this is someone's view of the world rather than the events themselves.

Maybe, after all this, television should now humbly withdraw the word 'news' from TV bulletins. If the BBC's Nine O'Clock News were called *The Kate Adie Show* and CBS nightly news were *Dan Rather Tonight* we would all have a better idea of what is going on.

A long-time co-editor at the NI, Peter Stalker is currently working for the International Labour Office in Geneva.

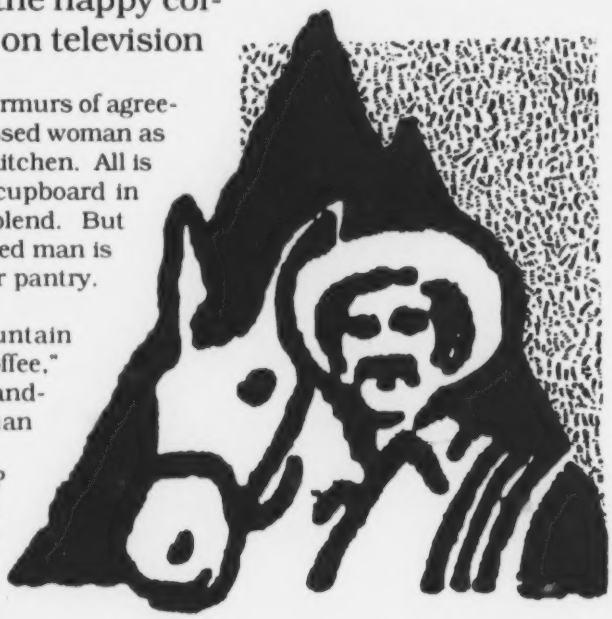
Reprinted from the New Internationalist, August 1991

# Who is Juan Valdez?

## From land ownership to international debt, the real story behind the happy coffee picker you see on television

"Coffee anyone?" Murmurs of agreement trail the nicely dressed woman as she enters her spotless kitchen. All is normal as she opens a cupboard in search of her favourite blend. But wait! A dark, mustachioed man is leading a mule out of her pantry. What can this mean?

"The rich, full mountain flavour of Colombian coffee," insists the voice-over, "hand-picked by people like Juan Valdez."



Who is Juan Valdez? Juan — or at least the image of him, his mule and a mountain backdrop — is a registered trademark. His character exists only in the minds of advertising copywriters, no more real than Aunt Jemima or Uncle Ben. But the image of the happy coffee picker stretches reality in more ways than one. If he does pick coffee, Juan is probably among the 13 million Colombians living below the poverty-line. He is cheap labour to a wealthy plantation owner, but like 66% of Colombian farmers, has no land of his own. That's because the richest 4% of the population controls over two-thirds of Colombia's productive farm land.

### CASH CROPS

The situation in Colombia is characteristic of many Third-World countries. Land that was once used to feed local people now grows crops that are sold in other countries. It makes sense to the wealthy landowners because they can make more money selling coffee beans in Europe and North America than they can selling lima beans to the local peasants. It makes sense to many governments because they desperately need the cash earned on export crops to service their foreign debt. It makes little sense to people like Juan Valdez who can't eat coffee and often can't afford food that must then be imported at world prices.

World prices hurt people like Juan particularly hard in recent years. The economies of most developing nations are almost entirely based on producing raw commodities (agricultural products such as coffee; minerals; and forest products) for export. Commodity prices fell dramatically in the 80s. In 1987, average prices were only 57% of what they were in 1980, and 52% of what they were in 1965. Falling export prices cost Colombia 500 million dollars in 1989 alone. While export prices dropped, the cost of importing manufactured goods from industrialized nations (like farm equipment and fertilizers needed to produce commodities) rose steadily. Both governments and landowners in developing countries are hurt by this relative trade deficit, and their losses are passed on to Juan Valdez in the form of fewer services and lower wages.

Juan's predicament raises many questions: why have commodity prices fallen; why don't developing countries do more processing instead of relying on raw materials; and how did developing countries accumulate such high debts to begin with? The answers to all these questions are related.

### EXPORT PRICES

Export prices are set by the old rule of supply and demand. Coffee is a product that is in high demand on world markets. If Colombia were the only nation producing it, prices would be higher. However, encouraged by World Bank and IMF financed development schemes, and under severe pressure to pay creditors, several Third World countries now grow coffee beans for the export market. By competing against each other they ensure lower prices. There is little competition among buyers because only

three multinational corporations control over 75% of the international trade in coffee.

**TRADE BARRIERS**

Though prices paid to producers have fallen, the savings aren't always passed on to consumers. Commodities such as coffee beans are usually transported raw to North America or Europe where they are processed, packaged and finally sold at prices more than 10 times those paid to the grower. Developing countries would earn more money if they did more of the processing themselves, but two things work against this strategy. One is that foreign owned subsidiaries often control the production of Third World resources and are prepared to sell to parent companies at low prices. The second reason is that many industrialized nations have discriminatory trade barriers against Third World finished products. For example, Canada imposes very few quota restrictions on agricultural products not in competition with our own, but the more processing is involved, the more tariffs rise. The coffee beans hand-picked by Juan Valdez can enter Canada tariff-free, but once roasted they face a levy of 4.41 ¢/kg. The tariff rises to 15.43 ¢/kg if the beans are processed in Colombia to make instant coffee. Often companies from the Third World simply cannot afford to export finished products.

**"Juan — or at least the image of him, his mule and a mountain backdrop — is a registered trademark."**

**INTERNATIONAL DEBT**

As prices for their exports fall and the cost of imports rise, developing nations are further debilitated by overwhelming foreign debts. Third World debt now stands at 1,300 billion U.S. dollars. The annual interest payments alone amount to almost $200 billion U.S. How did this happen? In the 1970s a number of western bankers were eager to invest a surplus of 'petrodollars' put in their hands by oil-rich OPEC countries. At the time, commodity prices were relatively high and huge loans were made to finance the 'modernization' of Third World economies. In the case of agriculture, this meant encouraging more countries to produce export crops (such as coffee), and employing new methods that substantially increased crop yields but required huge inputs of fertilizers and pesticides, as well as machinery — all of which had to be bought from industrial states. With more countries producing higher yields of the same crops, prices of those crops went down. Yet developing countries were now dependent on manufactured inputs, the price of which continued to rise. And so rose the debt.

The tragedy of debt is that it swallows up a large proportion of the resources which might otherwise be available for investment in human development. Through Structural Adjustment Programs (a series of austerity measures imposed by the World Bank and the IMF as a condition for further loans) public spending on education, health care and social services are cut, and currencies are devalued which further reduces people's spending power. Though the Juan Valdez's of the world receive few (if any) benefits from billion dollar loans, they and their children are the ones that ultimately pay for their nation's debt. According to UNICEF, "the currency they are paying with is their opportunity for normal growth, their opportunity to be educated, and often their lives."

**HOW YOU CAN HELP**

So what can you do to help people like Juan Valdez? One tangible way you can help is to buy coffee and other Third World products from an Alternative Trading Organization (ATO). There are about 40 ATOs worldwide, marketing mostly crafts, foods and textiles. ATOs work closely with farmers and artisan groups, paying them a fair price for their products and encouraging them to do more refining, packaging and transportation themselves. (In Canada, look for Bridgehead products in retail stores or call 613-567-1455 for a free catalogue.) Even the people who run Alternative Trading Organizations admit however, that their contribution is only a drop in the ocean. Any real improvement in the lives of people like Juan Valdez will require far-reaching political and economic changes on a global scale.

Sources: Third World Guide 91/92; Corporate Culture — "Old Habits Die Hard", South Magazine, February 1991; State of the World 1990; State of the World's Children 1991.

Reprinted from World Food Update 1991

# COCOA ADDICTS

More than 40 Third World countries produce cocoa for world markets yet few of its people actually eat its product, chocolate. The rich are hooked on consuming it, the poor on producing it. John Tanner looks at a key primary commodity — and at how it conditions life in Ghana

BITE into a chewy Hershey Bar or select your favourite Cadbury's chocolate and you are at one end of the cocoa trade. Swing your cutlass to sever the ripe yellowish-red pods from the cocoa bush and you are at the other.

The chocolate bars we buy in the West never go down in price. Their prices are raised 'in line with inflation' but never cut to fit in with the cheaper cost of cocoa on the world market. The result has been huge profits for the three multinational corporations which dominate the chocolate market: Mars and Hershey of the US and Nestle of Switzerland.

The cocoa-producing countries at the other end of the chain have no such price stability. Every year the price of cocoa is utterly unpredictable — though in the last decade if you'd predicted disaster you wouldn't have gone far wrong.

In the 1980s world cocoa prices fell by half. More and more producers began chasing fewer and fewer buyers. Production soared. The surplus cocoa mountain now stands at a huge one million tons, almost half what the world produces each year. It is a sad but typical story of the trade in primary commodities: Third World countries are so desperate to boost exports that each is always willing to undercut the next.

Ghana is one of those countries dependent on cocoa for the hard cash it needs to develop. The tradition of cocoa growing has put down deep roots into Ghanaian soil. Each village in the central zone around the Asante city of Kumasi has its cocoa storehouse. When the ripened pods are collected, they are cut open to reveal the white beans which must be fermented and dried. It is skilled work fermenting the beans under plantain leaves and then turning them dark brown in the sun.

Until 1980 Ghana was the world's largest cocoa exporter. It lives, breathes and thinks cocoa. One Ghanaian in four earns their living from the crop, which provides 60 percent of the country's foreign exchange. Cocoa supplies one third of Ghana's tax revenue.

The cocoa-price slide of recent years has thus been a disaster. Ghanaian cocoa does attract a small premium for its flavour, particularly from traders supplying the British market. But even so, cocoa brought Ghana just $395 million in 1988, compared with $503 million in 1986. Even less is expected for 1989.

All the same, successive Ghanaian governments did not help over the years by ignoring the cocoa farmer and causing a collapse in production. The Ivory Coast paid its cocoa farmers much more for their beans and became the number one exporter. Cocoa farmers in Ghana were the goose that laid the golden eggs, but the goose was never fed. Cocoa could only be sold to the Ghanaian Cocoa Board (known locally as the Cocobod), which paid farmers a small fraction of the world market price. By the early 1980s villagers were being paid so little that they left beans on the ground to rot.

Meanwhile, cocoa exports were used to finance luxury imports for the wealthy in Ghana and cocoa taxes paid for much of the civil service. The Cocobod's pay-roll grew from 22,000 in 1964 to over 100,000 in 1985, all on the back of the cocoa farmer. When the current military government led by Flight-Lieutenant Jerry Rawlings came to power it investigated the Cocobod. It found that 15,000 of those on the payroll were 'ghost workers' — staff who had died or long since left who were still being paid.

Paradoxically, while the collapse in cocoa prices has been disastrous for Ghana as a whole, the cocoa farmers themselves, 95 per cent of whom work small-scale peasant plots, are now feeling much better off. The Rawlings Government, under International Monetary Fund (IMF) guidance, decided to pay the farmers more in a bid to rehabilitate the cocoa sector. 'Formerly they were not even buying our cocoa but now that Chairman Rawlings is in, he is giving us encouragement', said one peasant.

Today the Cocobod is paying farmers about half the world market price. That was cedis 10,440 ($37) for a 60-kilo sack of beans at the end of last year — about a month's pay for a private soldier. Last season's record crop was partly down to good weather but also a result of much better returns for growers. Peasants who in the drought years of 1983 and 1984 had switched to food crops have been returning again to cocoa cultivation.

**"I'll never look at a chocolate bar the same way again!"**

The economic recovery programme derived from the IMF has made winners out of cocoa farmers and businesspeople who can export. Entrepreneurs can keep 30 per cent of their foreign-exchange earnings to pay for the import of luxuries. The losers are state-employed civil servants and teachers and, of course, the rural and urban poor. The civil servants and teachers have been forced to take second jobs, driving taxis or running market stalls. The poor are offered PAMSCAD, the Programme for Action to Mitigate the Social Costs of Adjustment, which has been slow to start.

Once considered dangerously radical, the Rawlings regime is now much — favoured by foreign-aid donors and is held up by the IMF as a shining example. 'Most of what we would like to see happens to be what the IMF would like to see,' I was told by Government representative Paul Victor Obeng. As a result a continued slide in cocoa prices would undermine Ghana's economic 'recovery' and be highly embarrassing for the IMF. It is a nightmare scenario which Obeng would rather not think about and which would force him to say to Western countries: 'As you are paying less for our cocoa, please give us more aid instead'.

The memory of hunger in 1983 and 1984, when bush fires raged, still haunts the Ghanaian imagination. The Government's objective has been to reduce malnutrition among under-fives from the 42 per cent in 1985 to 17 per cent by this year. No-one knows how successful they have been but at the moment markets in the villages and towns are piled high with plantains, fruits and vegetables — at a price.

Ghana does have enough land to feed itself. But the problem is that the amount of land claimed for agriculture by cutting down the forest has already reached its limits. This century Ghana's forests have shrunk from 8.2 million square kilometres to only 1.9 million. If population continues to increase at 2.6 per cent a year, a choice will soon have to be made between growing cash crops or growing food. At the moment farmers are being paid to grow cocoa but food production is being left to market forces.

Ghana probably has three options for the future. It can continue producing cocoa as now and hope that prices will recover and become more stable. It can develop the processing side of cocoa. Or it can switch to plantation production.

Ghana already produces its own chocolate at the busy port of Tema, but only for home consumption. Ghana Cocoa Products manufactures its 'Golden Tree' brand of milk chocolate, which is good quality and could in theory be exported. Demand for chocolate is increasing in the Third World, where the product usually has to be sold from the refrigerator. But Ghana would face fierce competition from companies such as Cadbury Schweppes. Alternatively it might process its own beans into cocoa powder and cocoa butter for export; subsidiaries of the big cocoa traders — Gill and Duffus of the UK, Cargill of the US and CacaoBarry of France — have been grinding beans in Brazil for home and abroad since the 1970s.

Faced with such competition from multinationals, Ghana seems more likely to go down the road of creating its own plantations. Tony Fofie is the senior manager in charge of the Cocobod's 21 cocoa estates and he has visited plantations in Malaysia. 'Oh you know, the rate at which Malaysia is producing cocoa on an estate basis is just fantastic', he said. He believes that with the right investment Ghana could make its estates profitable and produce cocoa just as efficiently as Malaysia. But public or private estates using new techniques would inevitably threaten the traditional farmers.

Like a junkie dependent on drugs, Ghana cannot give up cocoa. So whatever route it chooses it will remain prey to the vagaries of the world market. The best hope for Ghana and all other cocoa producers lies with an International Cocoa Agreement that would try to improve prices. This is not idealistic fantasy — such an agreement actually came into force in 1987. But it failed miserably because Indonesia, Malaysia and the US refused to participate. Indonesia and Malaysia are low-cost producers who believe they make more money with low prices than if they agreed to limit their exports. The US, the single biggest cocoa importer, simply says it supports a free market.

In the long term Ghana and countries like it can hope that the growing demand for chocolate in the Third World itself will revolutionize the cocoa trade. But in the short run prices will remain a lottery and the chocolate multinationals will continue to play off one Third World country against another.

John Tanner is a journalist who specializes in trade and development issues.

Reprinted from the New Internationalist, February, 1990

PUNCHLINE
by ©CHRISTIAN

FATHER WHY IS IT THAT OUR PEOPLE AREN'T GETTING ENOUGH FOOD TO EAT?
I'M AFRAID THERE'S SOMETHING IN OUR FIELDS TODAY, MY SON,...
THAT HAS COMPLETELY WIPED OUT OUR TRADITIONAL HARVEST.
FATHER, WHAT IS IT?! DROUGHT?! LOCUSTS?! RATS?!
CASH CROPS...
©CHRISTIAN

Reprinted from New Internationalist

### Bleak Prospects for African Coffee Growers

African coffee growers face an economic crisis and their main Latin American competitors appear unwilling to make the concessions that could put some of them back on their feet. A sharp downturn in coffee markets has been felt the world over since the International Coffee Agreement (ICA) fell apart in 1989, prompting prices to fall by one-third to their lowest levels in 15 years. In 1990, coffee growers throughout the world earned a total of only 6 billion dollars — far less than the 10 billion they netted three years earlier.

Hardest hit have been the producers in Africa such as the Ivory Coast, Uganda, Cameroon, and Kenya. Most of their coffee is of the robusta type used in making instant coffee. With a change in consumers' taste, mild coffee grown in Colombia and Central America is more in demand — with devastating effects on countries in Africa some of which are dependent on coffee for up to half their export earnings. Under the ICA quota system each producing country was allocated a share of what the major consuming countries imported each year. But overproduction and loopholes in the control system led to the collapse of the coffee agreement.

Because of the high demand for their better-quality mild coffee, Colombia and Central American countries have been able to sell all their production and all their stocks on the world markets and, therefore, do not want to return to a quota system. Brazil, the world's largest exporter, also favours free markets and hopes to profit from an expected price rise in the future.

Since Brazil and Colombia retain the majority of votes at the International Coffee Organization, chances of African producers are slim that a new agreement on a quota and price control system can be set up. **(Gemini)**

# Working for peanuts:

## tracing the development of trade in Senegal

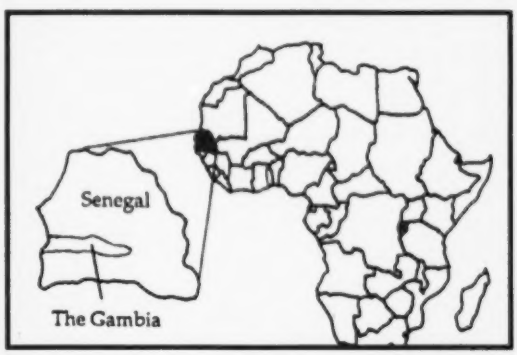
Long before Columbus sailed to North America, in the part of West Africa that today is Senegal and western Mali, the Wolof and Serer peoples established prosperous societies. Their economies were based on agriculture and on trade with the desert-dwelling nomads of North Africa. Skilled weavers and ironworkers produced cotton and woolen cloth, tools, knives, and cooking utensils.

The peasant farmers' fields in the river valleys were watered and enriched by the annual floods. When the floodwaters receded, the farmers planted the nutritious grain sorghum. On higher ground they grew millet, watered by the seasonal rains.

Farmers traded their extra grain to nomadic herders in exchange for milk, butter, meat, and hides.

Because this trade took place between relatively equal partners, neither group prospered at the other's expense. Although they lived in the arid Sahel region on the edge of the Sahara desert the exchange between farmers and herders helped both to survive droughts.

In 1659, France established a slave-trading outpost on the Senegalese coast. About one-eighth of the slaves traded to North America were taken by way of Senegal's port. During the nineteenth century, French armies conquered the interior of the country.




The French colonial rulers then set about to change the region's economy into a source of wealth for French investors. For the Senegalese people this meant shifting from producing food and crafts and supporting only themselves to producing enough goods both for themselves and the French. In economic terms, this is called shifting from a subsistence economy to a market economy. The French administrators also decreased trade among Africans by taxing the sale of locally made products. Artisans were put out of business by the taxes, and traditional manufacturing of cloth, shoes, tools, and soap declined. This helped create a market for products sold by French trading companies.

Additional taxes were imposed on men, women and children over the age of seven. Those who couldn't pay were jailed and sometimes brutally tortured or forced to labour for the French. To get cash to pay their taxes and to buy goods now available only from France, Senegalese peasants had to grow new crops for sale to French traders.

The crop desired by the French was peanuts, a profitable source of oil. Regular shipments of peanuts to France began in 1884. The amount exported rapidly increased to 200,000 tons in 1914 and to over 1 million tons in 1965.

Reprinted from Development and Cooperation, No.1, 1992

By 1970, Senegalese farmers had to supply six tons of peanuts in order to obtain the same amount of goods they had bought for one ton of peanuts in the early days of the trade. (This is an example of what is meant by declining terms of trade.) This meant that the farmers had to bring more and more land under peanut cultivation.

The more land used to grow peanuts, the less there was to grow vegetables and grain. Most food was eaten in the month right after the harvest. Little or none was left to trade or to store in case of drought. In this way Senegal's food self-sufficiency was destroyed.

To make up for the shortage of food, Senegal began importing rice from the French colonies in Indochina. (There, as in West Africa, peasants were forced by taxation and the loss of their farmland to produce cash crops for export.) Even with food imports, food availability in Senegal has continued to decline.

©CWDE

In addition to removing land from food production, peanut farming caused great ecological damage. Peanuts deplete the soil of minerals and organic matter. Constant growing and harvesting have exposed the soil to the wind and increased soil erosion.

For generations the peasants had conserved the land by cultivating millet and sorghum, planting alternating rows of peanuts and grain, and allowing the land to lie fallow for several years between crops. The pressure to produce peanuts for the world market forced them to abandon their preferred farming methods. Increased peanut cultivation was an invitation to the desert to expand its boundaries.

When harvests were bad, hunger forced poorer peasants to sell their land to the wealthier farmers in exchange for food. The result was the development of a small class of well-off farmers and absentee landowners and a much larger class of landless labourers made up of the farmers who had been forced to sell out.

Not only small farmers but nomadic herders also suffered. It became harder for them to obtain grain from the peasants in exchange for animal products. Farming areas, which had provided grass and grain for herds during droughts, were now used to grow peanuts. Herders could no longer seek refuge in the river valleys during drought and had to graze their herds on the already eroded desert land. The result was chronic hunger even in good years and wide-spread starvation in bad years. Millions of farmers were forced to leave their traditional homes to become labourers on coastal plantations or to seek work in the capital city of Dakar or in other West African countries or in France.

In 1960, when many African nations were achieving their independence from colonial powers, Senegal became an independent country. However, the distortion of the economy and the destruction of the environment caused by eighty years of emphasis on export agriculture remained. Senegal still had to export peanuts to pay for imported manufactured goods and rice. In 1981, Senegal imported $241 million worth of food, 28 percent of its total imports.

As an unequal trade partner, Senegal is still at a disadvantage in the world market. The price of peanuts has continued to decline in relation to the price of imported goods. There are several reasons for this. For one, although Senegal must compete against other peanut producing countries, there is little competition among the relative handful of transnational corporations that control the trade. Another reason is protectionism in developed countries, which impose either high tariffs or quotas targeted specifically on Third World exports.

Adapted from Exploding the Hunger Myths, Food First

Reprinted from World Food Update 1992

# SQUANDERING THE SOIL

***Soil has been described as a nation's most precious resource, since food supply depends on it.***

**DEGRADING THE FERTILE EARTH**

To biologists, it is a bridge between the inanimate and the living; to agricultural specialists, soil is the biosphere's foundation; to most farmers, the way to avoid famine and misery. Soil is all this and much more, for it has been proven that there is far more biological complexity in a handful of our planet's soil than on the entire surface of Mars or Jupiter! Yet the Earth's soils are being stripped away, rendered infertile, or contaminated with toxic chemicals. It is a vital concern, since soil formation is a long and complex process which, under the best conditions, can take from 100 to 400 years to generate ten millimetres of topsoil. Once the soil is removed, however, it is gone for good.

Throughout the world, land-abuse practices have degraded the agricultural resource base: soil erosion on nearly every continent; acidification in Europe and North America; deforestation and desertification in all regions of the Third World; waterlogging and salinization of close to half of the world's irrigated lands.

**"Soil? I've never really thought about it before."**

Few resource problems are so important, yet so little publicized as land degradation. Because it exists in all countries of the world, rich and poor alike, it has been aptly described as the quiet crisis in the world economy. And the toll is high. In Canada alone, farmers are losing over $1 billion a year in farm revenues as a result of poor land practices. These were recently described by a Senate Committee as creating the most serious agricultural crisis in Canada's history.

**EROSION: THE UNKNOWN CRISIS**

Soil erosion, a natural on-going process, has formed over the centuries some of the world's richest valleys. Within a balanced ecosystem, the soil is usually regenerated at roughly the same rate at which it is removed. But people have upset the balance. Specialists estimate that humans have increased the rate of natural erosion by at least 2.5 times in some zones. Misuse and neglect are largely responsible for this process which squanders the soil.

Erosion cripples the land's long-term productivity, by depleting soils of their nutrients. Half the countries in the world and more than 50 per cent of all arable land are experiencing soil erosion at unacceptable levels. Worldwide, an estimated 26 billion tonnes of topsoil are being washed away or blown off cropland each year. At this rate, according to the FAO, 275 million hectares or 18 per cent of all arable land (equivalent in size to Quebec and Ontario) will be lost in ten years' time. By 2025, the same amount could disappear again, if no conservation measures are introduced. Overall, unchecked erosion could result in a loss of 29 per cent in food production from rainfed cropland.

In the developing world, in particular, soil loss has reached critical levels. Ethiopia, for instance, loses as much topsoil as the U.S., though it is less than one-sixth the size. In the northern part of Africa, 35 per cent of the land is severely affected. In Guatemala, 40 per cent of the land's productive capacity has been lost to erosion. In western Asia, the figure reaches 65 per cent. In Haiti, quality topsoil no longer exists.

Generally, erosion occurs when farming practices fail to take conservation measures into account. Overworking the land is one of the main reasons soils are rapidly being depleted. It also explains why agriculture is in crisis in both the developed and the developing world. In the industrialized world, the heavy use of chemicals and fertilizers and too many pressures resulting from economic necessity, international prices and technological progress have created the problem. In the developing world, the burden of providing food for a growing population has increased pressure to expand cultivated areas, resulting in more marginal land being brought under the plow, with lower yields and greater environmental damage. In both cases, erosion results from demanding more than the soil can naturally yield. The loss of topsoil reduces the amount of land available for growing food, decreases yields and increases the cost of food production.

But the ill effects are not limited solely to food supplies. Eroded topsoil is carried to rivers, lakes and reservoirs, silting up dams, reducing reservoir storage capacity, shortening the life of irrigation systems, and increasing the incidence and severity of floods. All over the world, the same factors are at work: overexploitation of prime and marginal lands has triggered erosion, resulting in soil ending up in places where it does more harm than good. The immediate results are economic: a decline in productivity and farm revenues. Over a period of time, there is growing indebtedness for farmers and for countries. The long-term effects are social: as productivity declines, malnutrition sets in and the vicious circle of poverty and environmental degradation increases. What is at stake is not simply a question of land degradation, but the deterioration of life itself through the destruction of basic elements of the earth's life-support system. In the end, squandering the soil is undermining the earth's capacity to feed a growing population expected to increase by over a billion people in the next nine years. Already there are signs that the number of human beings suffering from starvation and malnutrition is rising steadily.

Reprinted from Development, Spring 1992, CIDA

# SAVE OUR SOILS

by DAVID S. LAZARUS

*Without soil there can be no plants and without plants there is nothing to capture the sun's energy, which is the basis of life on the planet. Soil erosion, which threatens all life on earth, can be halted, if countries recognize its severity and act quickly to combat it.*

In a refugee camp on the Sudanese border a man, searching to express this anger and despondency, took a handful of dust in his hand and let it sift through his fingers. 'This is why we left. Our land is like this,' the refugee said. He was not fleeing conflict, but hunger and drought.

In India, when Maneka Gandhi, Junior Minister for Environment and Forests, was asked to plant a sapling in a south Indian port, she took one look at the barren, rubble-strewn terrain and refused. 'If you don't like trees I am not planting this sapling,' she said. In a land where more than 70 percent of the 860 million population depend on agriculture for their livelihood, the gesture was succinct. Thousands of miles away, the refugee had made the same point: without adequate soil, the world will starve.

Very little of the Earth's land surface — only 11 percent or 1500 million hectares — is currently suitable for agriculture. In total, the world's potential cultivatable land amounts to only 3000 million hectares.

Various forms of land degradation, including soil erosion, could deprive the world of one-third of its arable land. While some experts say this estimate may be too pessimistic, according to a Food and Agriculture Organization (FAO) report, we are losing between 5 and 7 million hectares of good land per year because of degradation. 'In other words, cultivated land is being lost at nearly the same rate as new land must be brought under cultivation — which means we are running fast to stand still,' the report said.

UNEP's officer responsible for soils, Dr A. T. Ayoub, says that current research implicates deforestation as the main cause of accelerating soil erosion in developing countries. 'Crop yields are falling, fuelwood is getting scarcer, and the environmental crisis is deepening. The 'process' is self-fueling,' he said.

Worldwide, about 25 000 million tonnes of soil are being washed away each year. And the process is not confined to the developing world. The United States has lost about one third of its topsoil since farming began there.

Graphic: The Africa File, VIDEA

**"Erosion is a much bigger problem then I thought."**

Four major causes of land degradation have been identified. Excessive irrigation of badly-drained land in hot climates results in salinization of the soils and reduces their fertility. This happens because water pumped over the fields evaporates in the sun's heat and leaves dissolved salts on the soil surface.

A second cause of soil degradation is through biological and physical damage. When cultivated soils are deprived of essential fertilizers, the soils' naturally-available nutrients cannot sustain intensive crop growth, and become infertile. Soil may be physically damaged by repeatedly being worked on with heavy equipment.

Wind erosion occurs when soil is left bare of vegetation, and is particularly severe in arid and semi-arid areas where land is over-grazed and overstocked. An FAO/UNEP study on soil degradation reported that 22.4 percent of Africa north of the equator, and 35.5 percent of the Near East is affected by wind erosion.

Water erosion is the most common form of soil erosion. Massive damage is caused when gently sloping land is left exposed to the effects of heavy rain, and when steep lands are farmed unwisely.

There are also other processes, such as urbanization, mining, industry and land reclamation that all play a part in this insidious process.

While it may appear that wind and water are natural phenomena which humans cannot do much about, problems arise when farming practices do not take into account the soil fragility. In the face of exploding populations, especially in sub-Saharan Africa, there is intense pressure for food and fire wood. Grazing intensive cultivation and the removal of trees are carried out irrespective of the damage to the soil. 'Many traditional agricultural systems that were ecologically stable 40 years ago are now breaking down under increasing population pressure. For about two decades, food production in Africa has failed to keep up with the growth of its population,' says

Graphic: Paula Taffe, Development, Spring 1992

Dr. Ayoub. But he argues that soil degradation can be halted. 'What is needed are simple, cheap and effective techniques that farmers can easily learn and afford to use. They should minimize farming costs in both money and labour, and should compensate for any additional costs through increased production of food, fuelwood, fodder or other useful goods.'

In July 1990, UNEP produced the first world map of the extent of human-induced soil erosion and of the areas most at risk from erosion in the future. The maP, indicates the type of degradation — wind or water, whether the damage is physical or biological, the speed at which the processes occur, their extent in each area, and the major causes of the different kinds of erosion. The next stage in the process will involve sub-regional and national assessments of soil degradation.

UNEP has also contributed to the formulation and implementation of National Soils Policies (NSPs) in developing countries. These policies promote sound land use through research, training and education. UNEP helps to disseminate new technology and experience within and between developing countries.

Advisor services to formulate NSPs have been provided to Syria and Uganda in close cooperation with FAO. Indonesia and Jamaica will be the next countries to benefit from this service. A training programme is also being developed so that as NSPs are implemented, 'real life' experience and new technological developments can be shared by developing countries.

UNEP is also contributing to a comprehensive soil conservation strategy for Africa, through the African Ministerial Conference on Environment (AMCEN) programme. The aim of one of AMCEN's programmes is to use African skills and experience to find economically feasible, and environmentally sound solutions to the problems of development in 150 villages and 30 semi-arid stock raising zones. The intention is to enable communities to achieve self-sufficiency in food and energy without contributing to further soil degradation and loss.

While these initiatives cost money, the financial returns of effective soil protection far outweigh the costs. If US$4.5 billion a year were spent for the next two decades it could save the world $26 billion a year in lost production caused by land degradation. But these crude financial savings pale beside the intangible returns from saving the earth's soil for, without soil, all plant and animal life on the planet would perish.

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## IRRIGATION:
### PROGRESS AND SETBACKS

Of all the factors behind the success of the Green Revolution, none played a more critical role than irrigation, both in feeding growing numbers of people and in providing an adequate living for rural populations. As a result, a good number of developing nations, especially in arid and semi-arid areas, depend heavily on irrigated crops for their food supply. Half the food produced in India and Indonesia is grown on irrigated lands; in China, it is 70 per cent; in Pakistan, 80 per cent.

Ironically, irrigation can also pose a serious threat. Mismanagement of water, by badly planned and poorly managed irrigation systems, may actually lower yield over the long term, by waterlogging the soil and building up deposits of salt and other minerals in the top soil. Unless the salt is washed away, it accumulates, eventually turning once fertile farmlands into barren soils. According to the FAO, roughly half of the world's irrigated area of 271 million hectares suffers from either salinization, waterlogging or alkalization. In the U.S. alone, close to a quarter of all irrigated land is salinized. In South America, one-third to one-half of all irrigated areas is crippled by salt. And it is a chronic problem in the plains of eastern and western China, the Indian subcontinent, Central Asia, the Middle East, south-eastern Europe, and North and West Africa. Reversing excessive use of water, by pricing it responsibly or rationing it, is a first step in rehabilitation.

Reprinted from Development, Spring 1992, CIDA

# A view of water that assumes too much

*The approaches and assumptions of a water-rich and wasteful North could be holding back many of the world's poorest countries from developing appropriate ways of coping with water scarcity.*

Northern experts have been rather poor advisers to the South, because they have tended to take the presence of water for granted or to reduce any scarcity to a technical supply problem.

Water-poor countries in the South need a new development model, based on the sustainable use of available natural resources. They are ill-served by the example of the North, where water was either plentiful or transported to where it was needed at great cost.

Water scarcity is nothing new to the world's arid and semi-arid regions; local people have always contended with this environmental vulnerability. What is new is a higher population density, which is increasing the pressure on the finite amount of water that is supplied to a country by the global water cycle and which is pushing people onto ever more marginal lands.

Present water-management methods are the result of 200 years of efforts to solve problems relevant to Europe and North America. Europe had already been stripped of its forests and intensive farming was under way; water resources were being managed to meet the demands of the industrial revolution.

Judging from hydrology textbooks produced in the North (most textbooks in the field, in other words) the temperate zone, where most industrialised countries are located, appears to have forgotten the importance to its own development of easy access to water. This has led to a remarkable silence on the implications of climate-related water scarcity and the particular development challenges facing water-poor Third World countries.

For example, the massive water scarcity that looks set to threaten a billion Africans and even more Asians a few decades from now was not even mentioned by the Brundtland Commission in Our Common Future in 1987, although it is certain to have a profound influence on the environment and development of the affected countries.

The UN Food and Agriculture Organization (FAO) also suffers a certain "water blindness". Political leaders in the Third World generally strive for food self-sufficiency, but is there enough water to grow those crops?

The FAO has calculated the yield increases required for developing countries to produce all the food they need from rainfed agriculture. But the results are expressed in terms of "dry technology" only — for instance, the extra tractors and fertiliser that would be needed. Technical fixes will be of little use in areas that suffer recurrent drought years, where the constraint, plainly, is water.

The idea that crop yields can be increased simply by adding nutrients, pesticides and machinery without attention to the availability of water seems optimistic at best. One of the central lessons of the Green Revolution in Southeast Asia was that plants must have secure access to water before any of the promised benefits of other inputs can be contemplated.

It has been suggested that global warming might be slowed by growing more plant material on farms and in forests. But again, water scarcity would limit the feasibility of extending this idea into dry regions; any increased yields would consume large amounts of water. In the dry tropics and sub-tropics, about 1,000 cubic metres of water is returned to the atmosphere for every tonne of plant material produced. That is water that would otherwise have gone to recharging aquifers and rivers, where it might be badly needed for other purposes. In short, any increased yields in dry regions have to be balanced against society's other water needs.

Making best possible use of rainfall is an obvious way of improving the quality of life in drought-prone areas which are far from rivers that could provide water for irrigation.

Temperate-zone bias can be seen in the conventional way in which the climate of an area is described simply by giving precipitation data. The value of this information on its own is quite limited. A place in southern Sweden and a place in East Africa, both receiving the same amount of precipitation in a year (1,000 millimetres), have completely different climates. While only 50% of that amount might evaporate in Sweden, 150% could evaporate in East Africa, with more moisture leaving the land than the rains had supplied.

Discussions of the environmental problems of Third World countries are often biased by Northern perceptions which focus on problems caused by people. Much attention, for instance, is drawn to desertification and deforestation, while the severe environmental preconditions of a region are often overlooked.

There is, moreover, widespread confusion about what constitutes desertification. Intermittent drought years can be expected as part of a normal cycle at the edge of a desert, and vegetation will bloom and wilt accordingly. But failing vegetation is not the same as an encroaching desert, with desert conditions appearing where they did not previously exist. Calling both these phenomenon desertification has contributed to the current surprise that satellite observations do not support assertions that the Sahara Desert is growing systematically.

It is urgent that we get away from all these biases and false perceptions in order not to hobble the efforts of countries facing the tremendous challenge of improving the quality of life in parts of the globe where water is in extremely short supply.

Malin Falkenmark is professor of international hydrology at the Natural Science Research Council in Stockholm

Reprinted from Panscope, July 1992

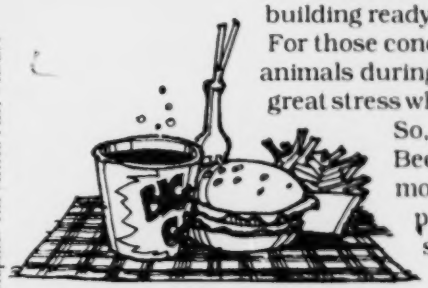
# THE AGE OF INDUSTRIAL FOOD

Time was, food was in the hands of farmers. These were people who, mostly, inherited their land from their parents. Along with the inheritance came generations of advice on how to grow what. "You can't grow wheat on the bottom forty." "Keep the sheep on the hills, and the cattle in the valley." "If your crop's not in by 3 June, your harvest could get nipped by the first frost of fall."

The land was nurtured. In spring, it got winter's collection of manure spread on it. Every so often fields were left unplanted to give them a rest. Each farmer was conscious that his or her land would have to feed and provide a livelihood for generations as yet unborn.

Now, we are in the age of industrial food. Farms are run like corporations, because that's what many of them are, as more and more family farms disappear. As corporations take over more and more food production they bring their corporate culture to bear on farming. The essence of all corporations is the same — they exist to make profits for those who invest in them.

The tried and true road to profit is efficiency. Produce food cheaper than your competitor and you'll sell, sell, sell. The production of chicken meat has become a complex industrial process that produces very cheap food. Chicks go in one end of the plant. For a few weeks, they live in an overcrowded factory and are fed a scientifically prepared diet by machine. After their allotted few weeks, the chickens appear at the other end of the building ready for slaughter. Pigs are produced in much the same way. For those concerned with animal rights, the living conditions for these animals during their brief stay on Earth are appalling. They are under great stress which causes pigs to chew off the ears and tails of other pigs. So, the animals are given antibiotics to calm them down. Because of confinement, salmonella bacteria are present in most poultry products. If consumers aren't careful in preparing their chicken dinners they'll get sick from salmonella poisoning.



Graphic: The Africa File, VIDEA

**"Do I feel comfortable eating the products of this industrial food machine?"**

But, consumers demand cheap meat. If people were willing and able, in large numbers, to pay the price for an organically raised, free-range chicken (roughly double the cost of a production-line bird) the poultry industry would be happy to supply that market.

The strong demand for cheap food plagues farmers in many other ways. Corporate agriculture loves the efficiency of monoculture — the growing of one crop over vast areas. That brings us cheap grain. However, you can't practice monoculture without the use of chemical fertilizers, pesticides, and herbicides. Eventually, with all the chemical interventions and heavy equipment the soil begins to break down and becomes less productive. But, not to worry, another technological fix for this problem will be devised.

Industrial food also means a reduction in choice. According to the Sierra Club, the global food supply is now heavily dependent on just 29 or 30 crops, whereas it used to be based on between 3,000 and 4,000. Of the 250 varieties of wheat available, just four varieties produce three-quarters of Canada's crop.

There's no question that the industrialization of the food business has brought us inexpensive groceries. But, at what cost? Is our industrial food system sustainable over the long haul? Are we using up our food production capacity for a quick profit? Will our farms be worth handing over to future generations?

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**agribusiness** (ag′rə biz′nis), n. farming and related food-processing and marketing business, operated as a large-scale modern industry.

— Random House College Dictionary

The term agribusiness is really a catch-all. It refers to the present system of modern industrialized agriculture which includes the production and distribution of food. The food business also includes farm financing, machinery, chemicals, seed and feed at the 'input' end and processing, manufacturing and marketing of food at the 'output' end.

After World War II, there was a dramatic transformation in agriculture as traditional farming practices disappeared with the advance of technology. A new form of agriculture was born with the introduction of mechanization, irrigation, plant breeding, fertilizers, herbicides and pesticides. The result has been a total restructuring of the food system to the degree that farmers no longer are producing our food, they are simply producers of raw materials for a food manufacturing system. Transnational enterprises have gained control of supplying farm inputs, processing farm outputs and distributing the end product.

The food industry is very concentrated in terms of ownership and market control. It is controlled by large corporations who have the ability to manipulate markets, prices, and commodity supplies on a global scale. In practically every sector of the food industry there are five to seven corporations that dominate, with one being the significant leader. Some 85% of the Canadian food industry is controlled by only six agribusiness firms.

Their "success" in the marketplace stems from business practices such as value-adding, risk management, and vertical integration. For the most part, these strategies have a detrimental effect on those at both ends of the food system, the farmers and the consumers.

To understand the concept of value-added it is important to realise that the market for food is 'inelastic'. This means that, despite changes in price, we can only put so much food into our stomachs. If we were to win a lottery jackpot, although we may buy more expensive food items, our expenditure on food would not change drastically. The challenge to the food industry is to wring all the money they can out this static demand for food.

For instance, Cargill, Inc. profits by adding value to cheap grain, using it as the raw material for livestock feed manufacturing, or by turning it into meat. McCain's turns a potato worth $0.86 per kilogram into "Superfries" at $1.83 per kilogram. Old Dutch makes it into potato chips and charges $7.45 per kilogram.

Another strategy in the corporate agribusiness gameplan is vertical integration. This refers to the practice of expanding into different phases of production within the same industry. In the midsixties, Del Monte began to diversify domestic operations by becoming its own best customer. It imported bananas and pineapples using a Del Monte shipping company, sold them to a Del Monte canning operation for processing, and then distributed them through a Del Monte institutional food supplier.

Cargill began trading grain in Canada in 1928, bought a seed company in 1971 , bought a feed mill in 1974, bought a retail feed and farm supply business in 1987, and is planning to build a fertilizer plant in 1990. Cargill will sell inputs to Canadian farmers and buy their products. All the farmers have to do is grow the crop.

Companies like Cargill rarely grow the crop themselves. This is one tactic in risk management. The risk of fluctuating market prices and poor harvests from bad weather and plant disease can be shifted onto the shoulders of farmers. In developing countries, multinational corporations tend not to invest in plantations to avoid labour costs, possible political disputes and the threat of nationalisation. Few coffee plantations, for instance, belong to multinational corporations. Most are privately held by local landowners and the crops are planted on a contract basis with the corporation.

Large corporations are able to manipulate agricultural markets and keep farm prices artificially low through activity in the futures market. A futures market is where commodities to be delivered some time in the future are bought and sold. Theoretically, it is supposed to allow both buyers and sellers to protect themselves from unnecessary losses. However, the biggest winners are the private corporations. They can make large enough purchases and sales to influence prices noticeably. They have access to sophisticated technology like weather satellites and teletype networks that help them make faster and more knowledgeable decisions about conditions that may affect future prices.

The most threatening practice of agribusiness multinationals, however, lies in their activities as oligopolies. The word oligopoly describes groups of companies which work informally together to determine price levels within their industry, to control markets and to set policy. It is obviously in the best interest of an intermediary to keep commodity prices low so that they might maximize their profit margin. Low commodity prices go to the farmer; over-processed, high-priced food is bought by consumers; and corporations collect the difference.

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# The Green Revolution in the Punjab

by Vandana Shiva

*The Green Revolution has been a failure. It has led to reduced genetic diversity, increased vulnerability to pests, soil erosion, water shortages, reduced soil fertility, micronutrient deficiencies, soil contamination, reduced availability of nutritious food crops for the local population, the displacement of vast numbers of small farmers from their land, rural impoverishment and increased tensions and conflicts. The beneficiaries have been the agrochemical industry, large petrochemical companies, manufacturers of agricultural machinery, dam builders and large landowners.*

In 1970, Norman Borlaug was awarded the Nobel Peace Prize for his work in developing high-yielding varieties (HYVs) of wheat. The "Green Revolution", launched by Borlaug's "miracle seeds", is often credited with having transformed India from "a begging bowl to a bread basket.", and the Punjab is frequently cited as the Green Revolution's most celebrated success story. Yet, far from bringing prosperity, two decades of the Green Revolution have left the Punjab riddled with discontent and violence. Instead of abundance, the Punjab is beset with diseased soils, pest-infested crops, waterlogged deserts and indebted and discontented farmers. Instead of peace, the Punjab has inherited conflict and violence.

**Origins**

It has often been argued that the Green Revolution provided the only way in which India (and, indeed, the rest of the Third World) could have increased food availability. Yet, until the 1960s, India was successfully pursuing an agricultural development policy based on strengthening the ecological base of agriculture and the self-reliance of peasants. Land reform was viewed as a political necessity and, following independence, most states initiated measures to secure tenure for tenant cultivators, to fix reasonable rents and to abolish the *zamindari* (landlord) system. Ceilings on land holdings were also introduced. In 1951, at a seminar organized by the Ministry of Agriculture, a detailed farming strategy — the "land transformation" programme — was put forward. The strategy recognized the need to plan from the bottom, to consider every individual village and sometimes every individual field. The programme achieved major successes. Indeed, the rate of growth of total crop production was higher during this period than in the years following the introduction of the Green Revolution.

**"It sounds like India was doing O.K. without all these 'High Yield Varieties' and pesticides and stuff."**

However, while Indian scientists and policy makers were working out self-reliant and ecologically-sound alternatives for the regeneration of agriculture in India, another vision of agricultural development was taking shape within the international aid agencies and large US foundations. Alarmed by growing peasant unrest in the newly independent countries of Asia, agencies like the World Bank, the Rockefeller and Ford Foundations, the US Agency for International Development and others looked towards the intensification of agriculture as a means of "stabilizing" the countryside — and in particular of defusing the call for a wider redistribution of land and other resources. Above all, the US wished to avoid other Asian countries' following in the revolutionary footsteps of China. In 1961, the Ford Foundation thus launched its Intensive Agricultural Development Programme in India, intended to "release" Indian agriculture from "the shackles of the past" through the introduction of modern, intensive chemical farming.

Adding to the perceived geopolitical need to intensify agriculture was pressure from western agrochemical companies anxious to ensure higher fertilizer consumption overseas. Since the early 1950s, the Ford Foundation had been pushing for increased fertilizer use by Indian farmers, as had the World Bank and USAID — with some success. Whilst the government's First Five Year Plan viewed artificial fertilizers as supplementary to organic manures, the second and subsequent plans gave a direct and crucial role to fertilizers. But native varieties of wheat tend to "lodge", or fall over, when subject to intensive fertilizer applications. The new "dwarf" varieties developed by Borlaug, however, were specifically designed to overcome this problem: shorter and stiffer-stemmed, they could absorb chemical fertilizer, to which they were highly receptive, without lodging.

By the mid 1960s, India's agricultural policies were geared to pushing the introduction of the new "miracle" seeds developed by Borlaug. The programme came to be known as the New Agricultural Strategy. It concentrated on one-tenth of the arable land, and initially on only one crop — wheat. By 1968, nearly half the wheat planted came from Borlaug's dwarf varieties.

A host of new institutions were established to provide the research required to develop further the Green Revolution, to disseminate the seeds, and to educate people in the appropriate agricultural tech-

niques. By 1969, the Rockefeller Foundation, in co-operation with the Ford Foundation, had established the Centro International de Agriculture Tropical (CIAT) in Colombia and the International Institute for Tropical Agriculture (IITA) in Nigeria. In 1971, at the initiative of Robert McNamara, the President of the World Bank, the Consultative Group on International Agricultural Research (CGIAR) was formed to finance the growing network of international agricultural centres (IARCs). Since 1971, nine more IARCs have been added to the CGIAR system. Over the last two decades, FAO has played a key role in promoting the Green Revolution package of "improved" seeds, agrochemicals and irrigation schemes.

**The Myth of High Yields**

The term "high-yielding varieties" is a misnomer, because it implies that the new seeds are high yielding of themselves. The distinguishing feature of the seeds, however, is that they are highly responsive to certain key inputs such as fertilizers and irrigation water. The term "high-responsive varieties" is thus more appropriate.

In the absence of additional inputs of fertilizers and water, the new seeds perform worse than indigenous varieties. The gain in output is insignificant compared to the increase in inputs. The measurement of output is also biased by restricting it to the marketable elements of crops. But, in a country like India, crops have traditionally been bred to produce not just food for humans, but fodder for animals and organic fertilizer for soils. In the breeding strategy for the Green Revolution, multiple uses of plant biomass seem to have been consciously sacrificed for a single use. An increase in the marketable output of grain has been achieved at the cost of a decrease in the biomass available for animals and soils from, for example, stems and leaves, and a decrease in ecosystem productivity due to the over-use of resources.

Significantly, much of the increased yield obtained by planting the new HYV varieties consists of water. Increasing the nitrogen uptake of plants through using artificial fertilizers upsets their carbon/nitrogen balance, causing metabolic problems to which the plant reacts primarily by taking up extra water.

India is a centre of genetic diversity of rice. Out of this diversity, Indian peasants and tribals have selected and improved many indigenous high yielding varieties. Comparative studies of 22 rice growing systems have shown that indigenous systems are more efficient when inputs of labour and energy are taken into account.

**Loss of Diversity**

Diversity is a central principle of traditional agriculture in the Punjab, as in the rest of India. Such diversity contributed to ecological stability, and hence to ecosystem productivity. The lower the diversity in an ecosystem, the higher its vulnerability to pests and disease.

The Green Revolution package has reduced genetic diversity at two levels. First, it replaced mixtures and rotations of crops like wheat, maize, millets, pulses and oil seeds with monocultures of wheat and rice. Second, the introduced wheat and rice varieties came from a very narrow genetic base. Of the thousands of dwarf varieties bred by Borlaug, only three were eventually used in the Green Revolution. On this narrow and alien genetic base the food supplies of millions are precariously perched.

**Increasing Pesticide Use**

Because of their narrow genetic base, HYVs are inherently vulnerable to major pests and diseases. As the Central Rice Research Institute, in Cuttack, India, notes of rice: "The introduction of high yielding varieties has brought about a marked change in the status of insect pests like gall midge, brown planthopper, leaf-folder, whore maggot, etc. Most of the high-yielding varieties released so far are susceptible to major pests with a crop loss of 30-100 per cent." Even where new varieties are specially bred for resistance to disease, "breakdown in resistance can occur rapidly and in some instances replacement varieties may be required every three years or so." In the Punjab, the rice variety PR 106, which currently accounts for 80 per cent of the area under rice cultivation, was considered resistant to whitebacked planthopper and stem rot when it was introduced in 1976. It has since become susceptible to both diseases, in addition to succumbing to rice leaf-folder, hispa, stemborer and several other insect pests.

The natural vulnerability of HYVs to pests has been exacerbated by other aspects of the Green Revolution package. Large-scale monoculture provides a large and often permanent niche for pests, turning minor diseases into epidemics; in addition, fertilizers have been found to lower plants' resistance to pests. The result has been a massive increase in the use of pesticides, in itself creating still further pest problems due to the emergence of pesticide-resistant pests and a reduction in the natural checks on pest populations. The "miracle" seeds of the Green Revolution have thus become mechanisms for breeding new pests and creating new diseases. Yet the costs of pesticides or of breeding new "resistant" varieties was never counted as part of the "miracle" of the new seeds.

**Soil Erosion**

Over the centuries, the fertility of the Indo-Gangetic plains was preserved through treating the soil as a living system, with soil-depleting crops being rotated with soil-building legumes. Twenty years of "Farmers' Training and Education Schemes", however, have transformed the Punjab farmer into an efficient, if unwilling, "soil bandit".

Marginal land or forests have been cleared to make way for the expansion of agriculture; rotations have been abandoned; and cropland is now used to grow soil-depleting crops year-in, year-out. Since the start of the Green Revolution, the area under wheat, for example, has nearly doubled and the area under rice has increased five-fold. During the same period, the area under legumes has been reduced by half. Today, 84 per cent of the Punjab is under cultivation, as against 42 per cent for India as a whole. Only four per cent of the Punjab is now "forest", most of this being plantations of Eucalyptus.

The result of such agricultural intensification has been "a downward spiralling of agricultural land use — from legume to wheat to wasteland." The removal of legumes from cropping patterns, for example, has removed a major source of free nitrogen from the soil. In addition, the new HYVs reduce the supply of fodder and organic fertilizer available to farmers. Traditional varieties of sorghum yield six pounds of straw per acre for every pound of grain. By contrast modern rice varieties produce equivalent amounts of grain and straw. This has contributed to the thirty-fold rise in fertilizer consumption in the state since the inception of the Green Revolution.

Increased fertilizer use, however, has not compensated for the over-use of the soil. High-yielding varieties rapidly deplete micronutrients from soils and chemical fertilizers (unlike organic manures which contain a wide range of trace elements) cannot compensate for the loss. Micro-nutrient deficiencies of zinc, iron, copper, manganese, magnesium, molybdenum and boron are thus common. In recent surveys, over half of the 8706 soil samples from the Punjab exhibited zinc deficiency, reducing yields of rice, wheat and maize by up to 3.9 tonnes per hectare.

Partly as a result of soil deficiencies, the productivity of wheat and rice has declined in many districts in the Punjab, in spite of increasing levels of fertilizer application.

**Water Shortages**

Traditionally, irrigation was only used in the Punjab as an insurance against crop failure in times of severe drought. The new seeds, however, need intensive irrigation as an essential input for crop yields. Although high-yielding varieties of wheat may yield over 40 per cent more than traditional varieties, they need about three times as much water. In terms of water use, therefore, they are less than half as productive.

One result of the Green Revolution has therefore been to create conflicts over diminishing water resources. Where crops are dependent on groundwater for irrigation, the water table is declining at an estimated rate of one-third to half a metre per year. A recent survey by the Punjab Directorate of Water Resources, has shown that 60 out of the 118 development blocks in the state cannot sustain any further increase in the number of tubewells.

**Social Impact**

Although the Green Revolution brought initial fi-

nancial rewards to many farmers, especially the more prosperous ones, those rewards were closely linked to high subsidies and price support. Such subsidies could not be continued indefinitely and farmers in the Punjab are now facing increasing indebtedness. Indeed, there is evidence of a decline in farmers' real income per hectare from 1978-79 onwards.

The increased capital intensity of farming — in particular the need to purchase inputs — has generated new inequalities between those who could use the new technology profitably, and those for whom it turned into an instrument of dispossession. Small farmers — who make up nearly half of the farming population — have been particularly badly hit. A survey carried out between 1976 and 1978 indicates that small farmers' households were running into an annual average deficit of around 1500 rupees. Between 1970 and 1980, the number of smallholdings in the Punjab declined by nearly a quarter due to their "economic non-viability".

The prime beneficiaries have been larger farmers and agro-chemical companies. As peasants have become more and more dependent on "off-farm" inputs, so they have become increasingly dependent on those companies that control the inputs. HYV seeds are illustrative. Unlike the traditional high yielding varieties which have co-evolved with local ecosystems, the Green Revolution HYVs have to be replaced frequently. After three to five years' life in the Field, they become susceptible to diseases and pests. Obsolescence replaces sustainability. And the peasant becomes dependent on the seed merchants.

The further commercialization of seeds has been actively encouraged by the World Bank, despite widespread resistance from farmers who prefer to retain and exchange seeds among themselves, outside the market framework. Since 1969, the World Bank has made four loans to the National Seeds Project. The fourth loan — disbursed in 1988 — was specifically intended to encourage the involvement of the private sector, including multinational corporations, in seed production. Such involvement was considered necessary because "sustained demand for seeds did not expand as expected, constraining the development of the fledgling industry."

Intensive irrigation has led to the need for large-scale storage systems, centralizing control over water supplies and leading to both local and inter-state water conflicts. Despite a succession of water-sharing agreements between the Punjab, Rajasthan and Haryana, there is increasing conflict over both the availability of water and its quality. In the Punjab, farmers are actively campaigning to halt the construction of the Sutles-Yamuna Link Canal, which will take water to Haryana to irrigate 300,000 hectares for Green Revolution agriculture, whilst in Haryana, local politicians are lobbying hard for its completion. In 1986, irate farmers in the Ropar district of the Punjab, where the Link Canal begins, virtually forced the Irrigation Department to abandon work on the project. In May 1988, 30 labourers were killed at one of the construction sites.

*"For the past three years, we have increasingly lost money from sowing all our acreage with wheat. We have been held hostage to feed the rest of India. We are determined that this will change."*

The worsening lot of the peasantry in the Punjab, which is largely made up of Sikhs, has undoubtedly contributed to the development of Punjab nationalism. Many complain that the Punjab is being treated like a colony in order to provide cheap food for urban elites elsewhere in India. A representative of a Punjab farming organization stated in 1984: "For the past three years, we have increasingly lost money from sowing all our acreage with wheat. We have been held hostage to feed the rest of India. We are determined that this will change."

**A Second Revolution**

There are two options available for getting out of the crisis of food production in the Punjab. One is to continue down the road of further intensification; the other is to make food production economically and ecologically viable again, by reducing input costs. Sadly, the Indian government appeals to have adopted the former strategy, seeking to solve the problems of the first Green Revolution by launching a second. The strategy and rhetoric are the same; farmers are being encouraged to replace the "old technologies" of the first revolution with the new biotechnologies of the second; and to substitute wheat and rice grown for domestic consumption with fruit and vegetables for the export market. The production of staple foods is being virtually ignored.

Like the first Green Revolution, the second is being promoted on the promise of "peace and prosperity". It is highly unlikely that the second revolution can succeed where the first failed.

This article is extracted from *The Violence of the Green Revolution: Ecological Degradation and Political Conflict in Punjab*, a book published by Vandana Shiva, Dehra Dun, 1989.

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# Beyond the Green Revolution

Charles Marriott reports on the changing face of Third World agricultural research

It's very confusing to hear the recent upsurge in environmental concerns described as 'the Green Revolution'. The phrase was originally used for the spectacular increases in food production in parts of the Third World, through the introduction of modern agricultural technology in the 1960s.

In the late 1950s there was serious concern that population growth would outstrip food production, resulting in famine. It was thought that Third World countries could repeat the increases in food production achieved in the West, by using High Yielding Varieties (HYV) of crops, with greater use of fertilisers and pesticides, and more irrigation. Most HYVs were short-strawed rice and wheat, developed at the International Rice Research Institute (IRRI) in the Philippines, or the International Centre for Wheat and Maize Improvement (CIMMYT) in Mexico. These are two of twelve International Agricultural Research Centres (IARCs) in developing countries.

On its own terms, the Green Revolution was a success: India became an exporter of rice and wheat, and it has been estimated that an extra 500 million people have been fed by the new rice technology. However, the shortcomings soon became apparent.

First, the new technology was only adopted in certain areas, such as the fertile soils of the Punjab in India and Pakistan (which accounted for 81 per cent of HYV wheat in 1972), or the irrigated rice paddies of the Philippines. Marginal areas, and areas where rice and wheat weren't grown such as sub-Saharan Africa, were bypassed.

Second, more food did not necessarily lead to a reduction in poverty. The new seeds could yield well without fertilisers, pesticides and irrigation, but only achieved their full potential when these were supplied. So, although in theory any farmer could benefit from their use, it was only the richer farmers who could afford the complete 'package'. They could also more easily afford the risk of crop failures, which was higher than with traditional varieties. Poor consumers benefited from lower food prices, but competition for labour soon forced wages down, and they gained less in relative terms than the rich.

Most disturbingly, the benefits from the new technology were not sustainable. The new varieties depleted reserves of soil water and nutrients and increased dependence on imported inputs. Unless supplemented by large amounts of organic matter, fertilisers often led to soil acidification and erosion. Increased irrigation without improved drainage made soils too saline for crop production. The replacement of many traditional varieties led to the loss of genetic resources vital to future plant breeding.

If the Green Revolution had ended there, it might have been judged a failure. But agricultural research for the Third World has moved a long way since. Plant breeding now covers 'poor peoples' crops', such as cassava, and varieties suited to marginal conditions. IRRI has increased its research on upland, rainfed rice, and breeds varieties with qualities such as pest and disease resistance. In Syria, research is breeding wheat varieties tolerant of the high salinity found in many marginal areas. And there is increased emphasis on the qualities needed for human or animal consumption, such as taste, long straw or ease of cooking; after all, most poor farmers' products are consumed on the farm.

Since the poorest farmers usually live in remote areas where they cannot rely on timely delivery of the new inputs, even if they could afford them, agricultural research for the poor must look closely at the use of locally available natural resources. IRRI now supports training run by a local organic farmer on the use of Azolla, an aquatic fern which contains nitrogen-fixing bacteria. Under certain conditions, Azolla thrives in rice paddies, and can provide fertilisers, food, biogas, pigfeed, or some income if sold. It suffers from some pests, but these can be treated with a mixture of chilli, kerosene and tobacco.

Since 1986, IRRIs crop protection research has concentrated on integrated pest management, using pesticides only as a last resort, when resistant varieties, biological and cultural methods have failed. This move towards 'organic' research is prompted less by environmental and health concerns than by the costs and unavailability of manufactured inputs. Pesticide resistance and the killing of beneficial insects by alternative food sources (such as fish, crabs and frogs in rice paddies) are also responsible for this change.

The whole focus of research at IARCs has shifted towards small modifications of entire farming systems, involving teams of agronomists, economists and anthropologists. Because of the wide range of farmers' social, economic and climatic circumstances, this involves a more decentralised approach. However, the IARCs still have a slightly 'schizophrenic' attitude, harking back to their Green Revolution successes, while promoting sustainable agriculture.

But there is further yet to go: most IARCs see their role as transferring technology from the laboratory, through research and extension to farmers. Innovations can come from any source, including farmers. Only the International Potato Centre in Peru involves farmers in all stages of their work; consequently, their research is never 'finished', it just goes through a cycle of continuous improvements.

Farmers do not just hand on traditions, they actively experiment, so their knowledge is a renewable resource which must be wisely used. They are often the only experts on diverse local ecological conditions. So-called 'Farming Systems Research' could not be widely implemented without their involvement, since the costs of such a decentralised approach would otherwise be prohibitive.

This may seem like a novel approach but in 1943 a report on agriculture in colonial West Africa suggested that 'the systematic study of mixed cropping and other native practices might lead to comparatively minor modifications in agriculture, which might in the aggregate do more to increase crop production and soil fertility than revolutionary changes to green manuring or mixed farming (the new practices then being recommended)". Plus ça change! Maybe we too could learn something from the 'ignorant peasants' of the Third World.

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# Farmers who cultivate diversity

**The headlong rush to a few uniform crop varieties is undermining world food security. But some Third World farmers are slamming on the brakes, and working with scientists to rescue and improve traditional seeds.**

When harvests failed in Ethiopia during the 1983-84 drought, farmers forced off the land packed carefully before leaving their villages — not what they could take, but what they could leave behind. They poured seeds of every crop they normally grew into clay urns, then sealed and buried them in a safe place. For those who survived the famine, the urns were waiting, packed full of all the planting material they needed to get started again.

"That is how Ethiopian farmers saved the germplasm for the world," says Melaku Worede, director of the country's gene bank, where tens of thousands of seeds are stored in a more formal setting, at a constant temperature and humidity.

The role of small farmers in conserving and creating the plant genetic diversity on which the world's food supply depends has largely been ignored. Certainly in the North, attention has focused on the formal sector of laboratories and gene banks.

"Agricultural research was taken away from farmers," says Rene Salazar of the Manila-based non-government organisation, SEARICE. "Their rich and diverse knowledge based on different agro-ecological conditions, and according to their cultures, was lost and marginalised, together with their diverse plant genetic resources. This disempowers farmers, and prevents their true participation in development."

Salazar spoke at a recent London conference organised by Intermediate Technology and the New Economics Foundation, which spotlighted innovative farmer-scientist partnerships being forged in the South to give small farmers due recognition and support.

In a book on the same theme — *Growing Diversity*, edited by the Barcelona-based Genetic Resources Action International (GRAIN) and launched at the conference — Pat Mooney argues that farmers are not museum curators, but genuine innovators.

**"The reality is that biotechnology is controlled by TNCs (transnational corporations), which have gone beyond democratic control"**

"Like formal-sector scientists, they are breeders who conserve genetic diversity because they know they need it," writes Mooney, who works with the Rural Advancement Foundation International in Canada.

In the biotechnology era of genetically engineered seeds, and with a trend towards the "privatisation" of seeds and scientific research, efforts to protect farmers' control over the material they plant are more urgent than ever.

"The reality is that biotechnology is controlled by TNCs (TransNational Corporations), which have gone beyond democratic control," says Chilean agro-ecologist Miguel Altieri.

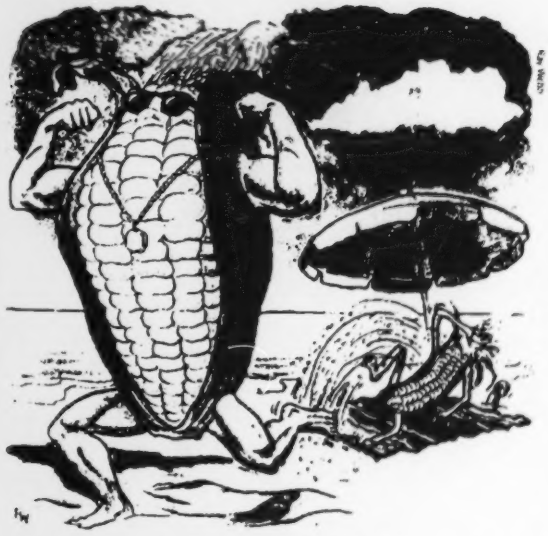
In the past 20 years, a handful of corporations has swallowed up more than 1,000 small seed companies around the world. The hungriest maws have belonged to pharmaceutical or petro-chemical giants such as Ciba-Geigy, ICI and Shell Oil, which sell the patented seeds of high-yielding varieties (HYVs) in a chemical envelope containing the fertilisers and pesticides the companies also produce. Farmers become dependent on costly inputs as their crops become hooked on chemicals.

In some countries, the only seeds certified for sale are the HYVs developed by plant-breeders in white lab coats. This means the big seed companies get to play God when they drop varieties from their catalogues.

Where only HYV seeds are approved — Zimbabwe, for instance — farmers can grow traditional varieties, but they cannot market the produce. In some countries, such as the Philippines and Thailand, farmers cannot get credits or loans to grow non-HYV varieties. In Indonesia, it is illegal to plant traditional varieties on land irrigated by government projects.

But HYVs are only "high-yielding" under optimum conditions, which do not exist in the fields of most small farmers. Genetic erosion is far from just a Southern problem. "I appreciate the problems in the South, but if anything it's worse here," says Alan Gear of the Henry Doubleday Research Association in Britain, which promotes organic farming. "Indonesia is planning laws against certain varieties! We in the EC (European Community) have already got them; you can't sell seed of any vegetable variety that isn't on the National List. As a result we've lost hundreds of useful varieties. Traditional farmers are struggling to maintain diversity! We hardly have any traditional farmers left."

Uncertainty and heated debate have surrounded the



Graphic: Our Planet, Vol 4, No 1, 1992

*Modern Botechnology is searching for a Super Corn, ta single species that "kicks sand in the face of lesser species."*

GATT negotiations on "trade-related intellectual property rights", known as TRIPS. Currently, patents are "exhausted" at the moment of sale. But if the holders of patents get their way, farmers will have to pay royalties if they follow tradition and replant seeds from the previous year's harvest grown from patented material. The proposal has sparked intense controversy, given that no royalties accrue to the countries or communities in the South that provide most of the raw material that goes into patented seeds developed in Northern labs.

"Broadening the circle of social control over how genetic resources are managed and used is central to tomorrow's food security, both in the South and in the North," says Michel Pimbert, head of the biodiversity programme at the World Wide Fund for Nature in Switzerland.

"This may be a rather uncomfortable message for the [corporate] gene traders — the corollary of the empowerment of people is, after all, the diminution of their own power. But that's a small price to pay for the food security of everyone."

One successful alliance between farmers and scientists had its origins in the Ethiopian famine of the early 1980s, recalls Worede: "There was so much drought, we started thinking that perhaps the best way would be to come down from the ivory tower and work hand-in-hand with our farmers, and back up the knowledge they have accumulated over centuries. Not only would we salvage Ethiopia's abundant plant genetic material — not just for ourselves, but for the rest of mankind — but at the same time help ourselves stand on our own feet and avoid external dependency."

Relief agencies need to consider the possible long-term impact of seeds given out in times of stress, says Worede. Food aid in the form of grains not normally grown in a country, such as hybrid wheat, can become part of the problem. Farmers will be tempted to grow the relief grains after their own crops have failed. Traditional cereals, which are better suited in the long run to a drought-prone environment, could be pushed out, under-mining future food security.

Ethiopia's experience illustrates the need for governments and NGOs to add a genetic-diversity component to project screening, in the same way they may now routinely evaluate projects from an environmental or gender-equity point of view.

Initially, the Ethiopian plan was simply to redistribute the traditional seeds to farmers once the drought was over. But Worede came up with the idea of extending the conservation and seed-enhancement work of the Plant Genetic Resources Centre, which runs the national gene bank, to selected farmers' fields as a permanent strategy.

Seed varieties rescued from drought-hit areas in Wollo and Shewa were given to farmers to replant in special conservation plots. The farmers have access to the genetic resources of the gene bank to improve their crops, and scientists from the centre assist farmers in selecting the seeds best adapted to environmental stresses such as drought and pests. Then those seeds are multiplied and distributed to other farmers. Traditional varieties — such as a high-protein sorghum that local farmers call "Why bother with wheat!" — are thus maintained and enhanced in a dynamic, evolutionary type of conservation. The centre pays participating farmers, who are mostly women, whatever they would have earned if they had had in their fields the most valuable crop in the region.

Worldwide, agriculture — mirroring nature — has been in a state of permanent evolution, punctuated periodically by revolution. "The Chinese powered their agricultural revolution (from the 10th to 15th centuries) with a sevenfold increase in irrigation projects; Arabs powered their revolution with the introduction of new crops; and the Green Revolution was based on fertilisers," writes Mooney.

"The power behind the next revolution must be human minds, those of the informal innovators ... Their genius, their knowledge, their field laboratories and their very diversity are essential forces in creating a people-based agricultural revolution that will allow the poor to eat and the earth to survive."

Kelly Haggart is editor of Panoscope Magazine. *Growing Diversity* is available for £9.95 from Intermediate Technology Publications, 103/105 Southampton Row, London WC1B 4HH, UK

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# ARE HAZARDOUS WASTES FED TO CROPS?

**By A. Paul Gill**

TO EXPLAIN how pesticide use today has become such an integral part of conventional farming practice, the political and economic reasons behind the development and production of pesticides must be understood.

The United States used Nazi research to develop its own chemical weapons industry and pesticides were a natural spin-off because of the similar compounds used. Many of the mustard and nerve gas plants made during the war were converted to the mass production of fertilizers and pesticides. Once profits were realized and no immediate problems arose, pesticides and fertilizers became inseparable from agriculture and the chemical industry became a vital part of the American economy.

Pesticides are promoted to protect farmers' crops from devastation. However, the use of insecticides has actually led to secondary infestations. For example, spraying in California has severely reduced the natural enemies of spider mites and they destroyed the 1991 lettuce crop. Farmers are now facing yearly infestations of insects or fungi because tinkering with the ecological equilibrium has created imbalances within pest populations. Ironically, farm productivity has been reduced by 12 per cent since pesticide use began because of soil depletion from intensive agriculture.

Although productivity has been reduced, pesticides are highly valued because they increase the yield of esthetically pleasing, marketable produce.

Today, pesticides are big business. Over 6,500 pesticides are registered for use in Canada and they accounted for over $800 million in sales in 1991. In 1985, 64,000 tonnes of "active" ingredients were used in Canada alone. The research, development and testing of one pesticide takes up to 10 years and costs up to $100 million. Only one in 10,000 chemicals tested actually becomes registered for use. The enormous cost of production limits the development of newer, safer pesticides. Products licensed in 1960s and 1970s make up a majority of those on the market today because of this factor.

Any delay in the licensing of a product, or any demand for more complete testing of its toxicity or environmental impact raises costs and cuts into profits. Chemical corporations are resistant to studying the environmental impact, reluctant to allow tight licensing regulations, are hostile to those who might question their test results and use considerable financial resources to influence public opinion and politicians.

U.S. Environmental Protection Agency press officer Al Hire told reporter Andrea Helm, of the North Carolina alternative paper Green Line, that permitting hazardous wastes to be "recycled" in pesticides is a "way of disposing hazardous materials." He later changed that statement to a "way of using hazardous chemicals." If hazardous wastes are being placed in pesticides, hazardous emissions from chemical plants would naturally be reduced and their profits increased.

A pesticide has two components, an active ingredient that kills the pest and an inert carrying agent that may contain 2,000 different chemicals. The EPA lists four types of inert chemicals: Chemicals with toxicological significance, those with possible toxicological significance, those that are safe and those which are unknown. The term "inert" ingredient refers to chemicals that do not help or hinder the elimination of the pest. This does not mean they are safe.

In 1991, the EPA again confirmed that hazardous waste could be used as "inert" ingredients in pesticides when questioned by Elizabeth Iglesias under the Freedom of Information Act. Evidence has also been found that America's two largest haulers of hazardous waste, BFI and Waste Management Inc., started buying into the pesticide business in the 1980s.

Is it possible that hazardous chemical waste is being disposed of through pesticides, fertilizers, gasoline or other manufactured products? Rationale for such an argument is based on corporations' need to increase profit. To dispose of hazardous waste in storage facilities is expensive. To "recycle" hazardous waste into pesticides and fertilizers is diabolical, ingenious and, unfortunately, legal.

**"Yuck! Organic food's sounding better all the time."**

Graphic: The Africa File. VIDEA

Politicians are not blameless in this nightmarish scenario. In North America, chemical companies have proprietary rights which eliminate the public's right to know results of toxicity testing and the contents of pesticides. Product secrecy is protected by the government despite the fact that pesticide testing done by Industrial Bio-Test Laboratories (IBT) was found to be fraudulent in 1977. Most of the major insecticides, fungicides and herbicides used in Canada today, such as Guthion, Captan and Dinoseb, were approved using IBT testing results but were never taken off the market.

Pesticide registration is the responsibility of the Fed-

eral Ministry of Agriculture. The purpose of the Ministry of Agriculture and the influential company organization, the Crop Protection Institute, is to improve crop yield, not to protect the public or the environment. The long-standing relationship between these two organizations allows chemical companies to essentially shape the federal pesticide registration system. The chemical companies thwarted the demands of the Canadian Labor Congress representatives to list active and inert ingredients on pesticide packaging.

On April 15, the federal Minister of Agriculture announced yet another aid program for farmers totalling $800 million. Would this public money not have been better spent in a program to convert farms to organic agriculture? Is the public essentially paying money to chemical corporations through the government and farmers to dispose of hazardous waste on our food crops? If so, is there anything to be done?

In the short term, chemicals used on produce must be listed and displayed at the supermarket and a national definition of "organic" must be developed for produce. As well, authority over pesticides should be vested in an independent body set up to develop and control pest control strategies which would include safe alternatives to pesticides.

In the long term, the reduction and elimination of poisons from our food crops is the only logical solution. This will probably result in a reduction of farm size and an increase in the number of farmers as farming becomes more labor-intensive to reduce costs. For this to occur, people will have to realize what the true costs of pesticide use are before enough momentum builds to eradicate pesticides once and for all.

*Paul Gill is a researcher for the Canadian Farmworker's Union in Surrey, B.C.*

Reprinted from the Times-Colonist, May 30, 1992

# DEADLY EXPORTS

Ten years after David Weir and Mark Shapiro documented the effects of dangerous pesticide exports from industrialized countries to the Third World in their book *Circle of Poison*, the practice remains wide spread. The persistence of the deadly trade is an international disgrace, a crime committed by the North against the South — and against itself.

For the Third World, imported pesticides which are banned or restricted in Northern countries cause pesticide poisonings and severe environmental degradation. Consumers in Northern countries are also affected, as pesticides legally barred from appearing on their food slip through weak border inspection programs and show up on fruits and vegetables imported from countries which purchase the pesticides.

The World Health Organization has recently estimated that Third World agricultural workers experience 25 million cases of acute occupational pesticide poisoning each year. Tens of thousands die from workplace exposures, with many more undoubtedly suffering from pesticide induced or related diseases.

Pesticide run-off into groundwater supplies, wet-lands, rivers and streams is a major environmental problem in many Third World countries. Pesticide use, associated largely with agricultural goods produced for export, such as bananas and cotton, has poisoned bodies of water in countries ranging from Costa Rica to Tanzania to Malaysia.

While overuse of a wide range of pesticides is responsible for this damage, many of the most toxic effects are caused by pesticides banned or restricted in industrialized countries. Northern countries have imposed restrictions on their use precisely because they are dangerous — but the restrictions do not apply to sales to the Third World.

The primary elements of a morally justifiable and ecologically sound policy on pesticide exports are simple and straight forward. First, companies should not be permitted to export a pesticide from a country which has banned or refused to approve its use or does not allow any residues of the pesticide to appear on foods. Second, if a country finds a pesticide to be hazardous and restricts its use, exporting companies should be required to obtain "prior informed consent" from importing countries. Companies should provide importing countries with information explaining the pesticide's dangers, and the pesticide should not be transferred until the country's government affirmatively indicates its willingness to accept it. Third, all warnings about hazards should be displayed prominently on pesticide containers and written in the primary language of the importing country.

Bills containing most of these provisions were introduced in the U.S. Congress in 1990, but a massive campaign orchestrated by chemical manufacturers defeated it.

In order to gain Congress's attention, consumer and environmental groups which supported the legislation highlighted the effects of pesticide use on Northern consumers rather than the more serious ramifications for people and the environment in the Third World, in part because of this focus, their efforts were beaten back by the pesticide lobby, led by the National Agricultural Chemicals Association (NACA). NACA argued that pesticide residues on imported foods could best be limited by improved border inspections. This is false; the Food and Drug Administration only inspects between 1 and 2 percent of food imports and even a doubling of its efforts would still allow the vast majority of imported food to enter the United States without inspection.

Senator Patrick Leahy, D-Vt., and Representative Mike Synar, D-Okla., have again introduced legislation, known as the Circle of Poison Prevention Act, to stop the vicious trade in banned pesticides. Their bills deserve support.

Unfortunately, the legislation will not solve the problem of pesticide misuse and overuse. Pesticide usage is not sufficiently regulated in the United States, so bringing U.S. exports in line with domestic policies will leave many hazards untouched. Additionally, the United States is only responsible for approximately 25 percent of world pesticide production and, as Angus Wright points out in the most recent issue of the Pesticide Action Network's Global Pesticide Campaigner, Third World pesticide production is rapidly increasing.

Nevertheless, the U.S. Circle of Poison legislation, if enacted, will be an important step on the path to instituting controls on the world pesticide trade and on the even longer road to replacing intensive pesticide use with sustainable agricultural practices — in the Third World and in the North.

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# WHAT CANADIANS ARE EATING

by Tullio Caputo and Neil Poutanen

The diet of Canadians is different now than it was in the past. In particular, red meat consumption is lower than in the mid-1970s, while the amount of poultry and fish eaten has increased. Low-fat milk, cheese, and yogurt, as well as fresh vegetables, have also gained in popularity. In contrast, both egg and butter consumption have dropped.

Changes in eating habits have been driven by a variety of factors. In recent years, Canadians have been exposed to an increasing amount of information about nutrition and the benefits of a healthy diet. Scientific evidence has linked certain foods to heart disease, cancer, and other illnesses. The availability and cost of various foods, the development of suitable substitutes for expensive or undesirable products, and marketing strategies also influence consumption patterns. In addition, the changing age and lifestyle profile of the population affects the type and quantity of foods eaten.

**Changes in meat consumption**

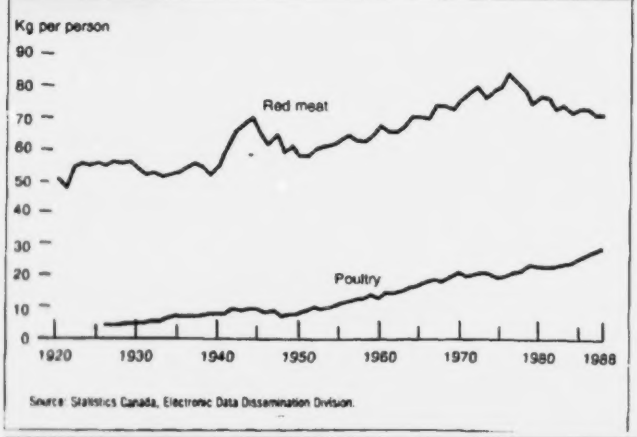
From early in the century until the mid-1970s, both red meat and poultry consumption increased. Between 1920 and 1976, annual red meat (beef, pork, mutton, and veal) consumption rose from 51 kg to 84 kg per person. Over roughly the same period, the average amount of poultry (chicken, turkey, and other fowl) eaten by each person rose from just 3 kg to 20 kg.

Since the mid-1970s, however, consumption trends for these two types of meat have diverged. Average annual red meat consumption dropped to 71 kg in 1988. This drop was driven almost exclusively by a decline in the amount of beef eaten. Between 1976 and 1988, average beef consumption fell from 51 kg to 38 kg per person.

In contrast, poultry consumption continued to increase, such that by 1988, each person ate an average of 29 kg. Chicken consumption accounted for most of this increase, rising from 15 kg per person in 1976 to 23 kg in 1988.

SOCIAL TRENDS

Average annual consumption of red meat and poultry, 1920 - 1988




Source: Statistics Canada, Electronic Data Dissemination Division.

**Fish**

Although Canadians eat much less fish than meat, they are eating more fish now than they did during the late 1960s. In 1988, average fish and shellfish (fresh and frozen) consumption amounted to 4.9 kg per person, up from 2.5 kg in 1967.

Most of the increase, however, took place before the mid-1970s. In 1976, each Canadian ate an average of 4.7 kg of fish and shellfish. Since then, the annual amount has fluctuated between 4 kg and 5 kg per person.

**Milk and milk products**

Canadians are switching to low-fat milk. In 1988, each person drank an average of 65 litres of 2% milk, triple the 21 litres consumed in 1967. Skim milk consumption has also risen from 3.3 litres per person in 1967 to 5.6 litres in 1988.

In contrast, average consumption of standard 3.25% milk dropped to 28 litres per person in 1988 from 66 litres in 1967.

Cheese, a major source of protein, has gained in popularity over the past two decades. In fact, cheese consumption more than doubled from 2.8 kg per person in 1967 to 6.2 kg in 1988.

Although still low, yogurt consumption has also grown substantially since the late 1960s. In 1988, Canadians ate an average of 0.4 kg of yogurt per person, up from just 0.02 kg in 1967.

**Eggs**

Each Canadian now consumes four dozen fewer eggs annually than in the late 1960s. Moreover, the decline has been relatively consistent throughout the two decades.

During 1988, each person ate an average of 205 eggs, down from 224 in 1977 and 250 in 1967.

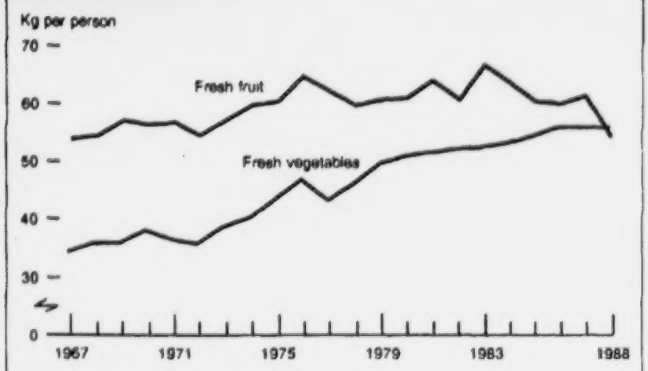
**More vegetables**

Overall, Canadians eat more vegetables now than they did two decades ago. In 1988, each person consumed an average of 57 kg of fresh vegetables, up from 47 kg in 1976 and 34 kg in 1967. Specific vegetables, however, show different trends. Consumption of fresh cauliflower, broccoli, and mushrooms, for example, rose quite sharply over the past two decades. In 1988, each Canadian ate an average of 3.0 kg of cauliflower, more than double the 1.3 kg in 1976; consumption in 1967 had been just 0.8 kg per person.

Broccoli's popularity also increased, quite rapidly in recent years. In 1988, broccoli consumption was triple what it had been in 1976: 2.1 kg per person, compared with 0.7 kg. The 1967 figure was just 0.2 kg.

SOCIAL TRENDS

Average annual consumption of fresh fruit and vegetables, 1967 - 1988




Source: Statistics Canada, Electronic Data Dissemination Division.

The quantity of mushrooms eaten also rose steadily over the past two decades to 1.6 kg per person in 1988. This was up from 0.6 kg in 1976 and just 0.2 kg in 1967.

Over the same period, carrot consumption increased, although much more slowly. In 1988, each person ate an average of 8.8 kg of carrots, a rise from 7.4 kg in 1976 and 6.6 kg in 1967.

Canadians have been inconsistent in the amount of potatoes they have eaten each year. In 1988, white potato consumption was 68 kg per person. Over the past two decades, the average annual amount of potatoes eaten fluctuated between 60 kg and 80 kg per person.

**Fruit and juices**

Fresh fruit consumption dropped sharply in 1988, after just over a decade of relative stability. In 1988, each Canadian ate an average of 54 kg of fresh fruit, down from 62 kg in 1987. This decline was likely precipitated, in part, by a sharp drop in fresh fruit imports, a downturn in production, and an increase in exports.

Between 1974 and 1987, annual consumption figures had generally fluctuated just above 60 kg per person. Before this period, however, the amount of fruit eaten had been increasing. In 1967, fresh fruit consumption averaged 54 kg per person.

After rising sharply between the late 1960s and mid-1980s, juice consumption dropped off in 1985 and has remained relatively stable since then. In 1988, each Canadian consumed the equivalent of 41 kg of fruit in juice. This figure was lower than the peak of 50 kg per person in 1985, but still more than double the 20 kg consumed in 1967.

**Fats and oils**

Total consumption of fats and oils has increased slightly since the late 1960s. In 1988, each Canadian consumed an average of 20 kg of fats and oils, up from 18 kg in 1967.

Over the last twenty years, however, Canadians' taste for specific fats and oils has changed considerably. Butter consumption has been dropping since the late 1960s. In 1988, each person ate an average of 3.1 kg of butter, down from 6.1 kg in 1967.

Margarine consumption rose between the late 1960s and the mid-1980s, but has declined slightly since then. In 1988, each Canadian ate an average of 4.7 kg of margarine, down from a peak of 5.3 kg in 1985. However, this was still considerably above the 1967 amount of 3.4 kg.

Consumption of shortening and oils, although higher in 1988 than in 1967, has been relatively stable throughout the 1980s (between 8 and 9 kg per person annually). For example, in 1988, consumption of these foods averaged 8.5 kg per person. This, however, was up from 6.3 kg in 1967.

**Cereals**

Canadians eat more cereal now than they did in the past. Between 1967 and 1988, overall annual consumption of breakfast cereals rose from 3.0 kg to 4.4 kg per person.

Since the early 1970s, oatmeal and rolled oats have been slowly gaining in popularity, after a fairly sharp drop during the preceding years. By 1988, each person was eating an average of 1.8 kg of these cereals, up from 1.2 kg in 1973. Before 1973, however, oatmeal and rolled oats consumption had fallen from an average of 2.1 kg per person in 1967.

**Refined sugar**

Canadians generally eat less refined sugar now than they did in the late 1960s and early 1970s. In 1988, each person ate an average of 40 kg of refined sugar, down from a peak of 47 kg in 1973. Since 1974, annual consumption has fluctuated between 38 kg and 44 kg. (These amounts do not include the sugar content of processed foods.)

**"I can't start the day without a coffee."**

**Beverages**

Coffee consumption has been relatively stable throughout the last two decades. In 1988, each Canadian went through an average of 4.3 kg of coffee beans. Since 1967, average annual consumption figures have been between 4.1 and 4.8 kg.

On the other hand, tea consumption has declined since the mid-1970s. The latest data indicate that Canadians used an average of 0.3 kg of tea in 1987. This was down from a peak of 1.3 kg in 1974. Before then, annual tea consumption had been relatively stable since the late 1960s, at around 1.1 kg per person.

Canadians now drink considerably more soft drinks than they did in the mid-1970s. By 1988, consumption averaged 90 litres per person, up from 62 lives in 1974.

Both authors are with the Department of Sociology and Anthropology, Carleton University; Tullio Caputo is an Associate Professor and Neil Poutanen is a research assistant.

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# Eating simpler foods is good for the planet too!

Our food choices have an impact on the way the rest of the world's people live and die.

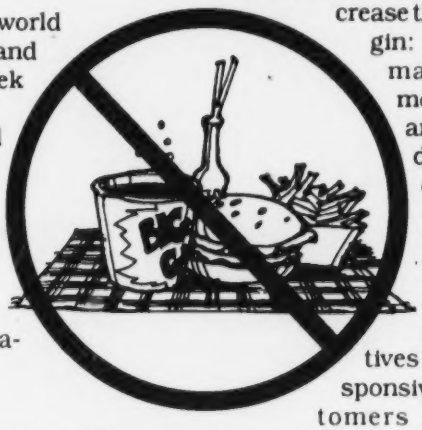
North America, with 7 percent of the world's population, consumes 40 percent of the world's food and energy resources. The demands we place on the world's finite natural resources contribute to world hunger.

People in affluent nations have the freedom and means to choose their lifestyles; people in poor nations do not. We can find ways to reduce our consumption of the world's nonrenewable resources; we can consume less food; we can choose to eat foods which use up fewer of the world's resources and we can, as consumers, demand local, organic foods which are not over packaged.

Voluntary simplicity involves a thousand small decisions related to food choices. The following outlines just a few.

***Eat lower on the food chain***

One major way to reduce the demands we make on world resources is to depend less on animal-based proteins and to use more plant-based proteins. Even one meal a week per person would make a difference.



Much rich cropland is used to grow animal feed instead of food for humans. Animals convert feed to edible animal protein at different rates. Chickens, for instance, require about 3 pounds of grain to produce 1 pound of meat, whereas cattle require 16 pounds of grain to do the same.

Vegetables are often nutrient rich and they demand far fewer of the earth's limited resources, measured in calories, than do meats.

***Select unprocessed foods, grown locally***

Unprocessed, in this sense, means with the nutrients left in, sugar and fat left out. You already know why you should select unprocessed, or whole foods for personal nutrition.

To appreciate why they are also good for the earth, and why buying locally is preferred, consider how potatoes grown far away might become a processed food, say potato chips, in your grocery store.

To make the chips, the whole potatoes are transported on fuel-burning trucks from the farm to the factory, where power-driven machines strip them of some of their parts (and some of their nutrients); other machines alter their shape and consistency; others add sugar, salt, and fat (each additive produced at its own factory); the mixture is cooked and dried in electric equipment; and still more machines portion out the finished potato chips into plastic bags (produced by other fuel-gobbling machines at other factories and trucked in).

Then the bags are put in boxes and hauled by still other fuel-burning trucks to the grocery store.

Now compare: you shop at a local farmers market and buy potatoes which you take home in your own bag. Not only is your own nutrition best served, but the cost to the earth's resources is immeasurably lower.

Even if the potatoes are brought in from the next country and sold in the grocery store, they are far preferable, in terms of their energy cost, to the potato chips. And even better for yourself and the environment if the potatoes were grown without the use of fertilizers and pesticides.

***Organize or support a local food coop***

Most supermarkets' first objective is to make money. Higher processed impulse items increase their profit margin: supermarkets make more money from sugared cereals, sodas, candy, and other end-of-aisle displays than from nutritious foods. In contrast, cooperatives are more responsive to their customers — they are owned by the consumers, so their is no conflict of interest.

They can offer bulk quantities of unprocessed foods for very little above wholesale prices and resist low-quality, jazzily packaged foods.

Making informed choices about the food we eat is a good place to start. As you read on, you'll find suggestions for other ways we green consumers can make a difference.

Information for this article was adapted from *Nutrition Concepts and Controversies*, by E. M. N. Hamilton, E. N. Whiteney, F. S. Sizer, 4th edition, 1988.

Reprinted from World Food Update 1990

# Prime Cut!

*Gayle Hardy offers three reasons for giving meat and fish a miss.*

**FOR YOU**

Graphic: The Africa File, VIDEA

Meat producers spend a lot of money telling you how much you need meat. They need to - because a growing body of medical evidence is stacked against them. Meat is not only unnecessary in a healthy diet but a hazardous extra.

So why do we eat it? Well, our ancestors probably turned to eating other animals about 2.5 million years BC, when the earth began drying out and the herbs and nuts on which most primates feed became less plentiful. The meat habit stuck, even though the cultivation of crops made it no longer necessary. The myth of meat as a food that makes you strong also stuck — although comparative tests prove the opposite.

But meat does give you some extra things that a vegetarian diet does not so readily provide. It is high in cholesterol and saturated fats which harden the arteries and are a main cause of heart disease. People who eat meat have an average blood cholesterol level 20 per cent higher than those who don't eat it.

Several forms of cancer such as that of the colon, breast, uterus and prostate are linked with meat-eating. Modern meat contains a number of carcinogens including nitrites used in processing and residues of antibiotics routinely used in factory farming. People on a vegetarian diet have 75 per cent fewer carcinogens in their bodies and their cancer rate is 30 per cent lower.

Most cases of food poisoning can be traced back to meat. Poultry meat is responsible for about 50 per cent of reported cases of salmonella poisoning and red meat is responsible for a further 20 per cent in the UK. As much as 80 per cent of oven-ready chicken is contaminated with salmonella which may or may not be killed in the cooking. Campylobacter, the main cause of enteritis in humans, is also linked with poultry, while meat-related listeria poisoning is on the increase. It has been suggested that a piece of raw meat should be treated with the same degree of care in the kitchen as a piece of raw sewage.

**"Meat? No thanks. I've got my health to think of."**

Fish is not much healthier. Thanks to pollution of the world's seas, methyl mercury poisoning and hepatitis are becoming increasingly common in fish-eaters. Factory-farmed fish is risky too. A highly toxic chemical called Aguaguard is routinely used to remove parasitic sea-lice and in the UK salmon are dyed pink with canthanxanthin — banned in the US as a cancer-forming agent.

Doctors have noted an increase in immunity to antibiotics amongst their meat-eating patients and suspect that the heavy use of antibiotics in factory farming may be to blame. Meanwhile, in Puerto Rico and Italy young children (some as young as six months) started developing breasts after eating meat which had been injected with the growth-promoter DES.

**FOR THE ANIMAL**

Graphic: Beef Information Centre

Most of the rich world's meat — and an increasing amount of the world's fish — is now produced in factory-farms.

Here are just a few of the most common methods used to bring your pork, beef, fish or fowl to the supermarket shelves and butchers' hooks.

- Sow stalls: After having been 'served' on a 'rape rack' the female pig is tethered in a metal-barred stall where she is unable to take more than one step backward or one step forward during her entire pregnancy. She is denied not only exercise but light, fresh air and companionship. By nature scrupulously clean she is forced to lie in her own excreta. She gives birth on a perforated metal floor. Her piglets are ripped away from her at two weeks — naturally they would have been weaned at two months. Five days later she is taken out and put on the rape rack where the cycle begins again.
- Poultry batteries: Kept in a dismal shed consisting of row upon row of wire cages, the battery chicken may never see daylight until it is taken for slaughter. Egg-laying hens are crammed into a tiny cage measuring only 45 by 50 centimetres. Their feet are deformed by the sloping wire mesh floor. Even eating causes pain as feathers are rubbed away in attempts to reach the automatic feeder. Overcrowding and intense boredom and disease lead to aggression, cannibalism and neurotic disorders including self-mutilation. Farmers guillotine the tops of their beaks to stop hens pecking each other to death.

• Fish farms: Fish are kept in cramped underwater cages and fed fish pellets containing antibiotics. Before they are bled to death they are starved for several weeks, because it is less messy to gut a starved fish. About 20 per cent die from afflictions such as skin ulcerations, bacterial kidney infections and cancerous tumours.

**FOR THE WORLD**

It is estimated that on a vegetarian diet the world could support a population six times greater than its current 5.3 billion. If each Westerner cut their meat intake by just 50 per cent it would save enough food to feed two people who would otherwise starve.

Meat production exacts its toll in ecological damage. The ranching of cattle in the worlds's rainforests is especially destructive. Each beefburger costs 55 square feet of rainforest to produce — that is half a tonne in weight of birds, trees and saplings. This contributes to global warming — as does the 60 million metric tonnes of methane, produced from the guts of the world's 1.5 billion cows. Methane is the second most important greenhouse gas.

Meanwhile, factory farming produces vast amounts of highly polluting animal sewage. Cattle and pig sewage is 20-40 times more potent than the human variety — and cattle produce nine gallons of the stuff per day. But in spite of this, raw sewage from farm animals is spread over fields to eventually find its way into streams, rivers and water supplies.

**If you still feel like eating meat after reading this you might consider reducing the amount you eat — and opt to buy free-range or organically grown varieties.**

Reprinted from the New Internationalist, January 1991

# WHAT'S THE BEEF & WHO PAYS?

**"These pages are a sampling of the growing body of literature based on current research which documents the pivotal role that livestock production plays in a number of global crises."**

**Land Usage & Grain Consumption**

5.4 billion humans inhabit the Earth along with 1.28 billion cows, whose number has been doubled in the past 40 years. Cattle nor outweigh humans by 2 to 1 in terms of total biomass.

There are a total of 4 billion cattle, pigs, sheep, goats, horses, buffaloes and camels and 11 billion fowl. The fowl population has grown from 5 billion to nearly 11 billion since midcentury.

All these animals graze on one-half of the total land mass. Grain consumption by livestock is growing twice as fast as grain consumption by people.

Cattle and other livestock consume over 70% of all the grain produced in the United States.

About 1/3 of the world's total grain harvest is fed to livestock while 1.3 billion people suffer from chronic hunger and malnutrition, and 40-60 million people die each year from hunger and related diseases.

66% of US grain exports goes to feed livestock rather than hungry people.

Millions of acres of land in poor, non-industrialized countries are being used solely for grain production for European livestock consumption.

In 1984 when thousands of people there were dying daily from famine, Ethiopia continued growing and shipping millions of dollars' worth of livestock feed to the United Kingdom and other European nations.

To feed the world's current population an American-style diet would require 2 1/2 times as much grain as the world's Farmers produce for all purposes.

Excerpted from What's the Beef and Who Pays © EarthSave Foundation, 1992

**"It seems disingenuous for the intellectual elite of the first world to dwell on the subject of too many babies being born in the second and third-world nations while virtually ignoring the overpopulation of cattle and the realities of a food chain that robs the poor of sustenance to feed the rich a steady diet of grain-fed meat."**

— *Beyond Beef*, Jeremy Rifkin (New York: Dutton, 1992)

## WHAT'S THE BEEF?

**Health Costs**
The US national health bill consumes 12% of its Gross National Product and threatens the foundation of medical care as we know it today.

While the US debates about the billions of dollars needed for national health insurance, it ignores the Surgeon General's report that 68%, of all deaths are diet related and does little to recommend and support healthy food choices

**Rainforests**
Since 1960 more than 25% of Central American rainforests have been cleared to create pastureland for cattle.

By the late 1970s, two thirds of all the agricultural land in Central America was utilized for livestock, which was destined for export to North America.

Cattle ranching has destroyed more rainforest in Central America than any other activity.

For every quarter-pound hamburger that comes from a steer raised in Central or South America, approximately 165 pounds of living matter have been destroyed, including some of 20-50 different plant species, perhaps 100 insect species, and dozens of bird, mammal, and reptile species.

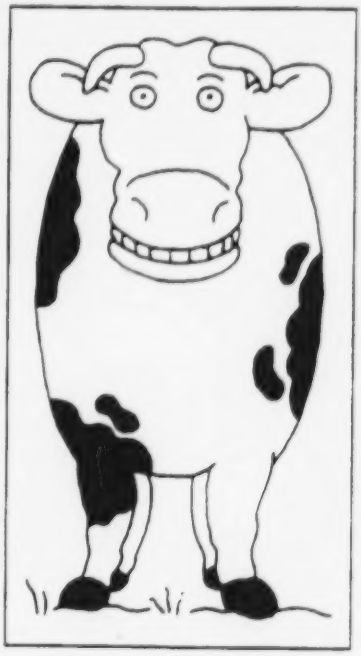
**Topsoil Loss**
85% of US topsoil lost from cropland, pasture, rangeland and forest land is directly associated with raising livestock.

Each pound of feedlot steak costs about 35 pounds of eroded topsoil.

An inch of topsoil takes between 200 and 1,000 years to form under natural conditions.

The direct and indirect costs of soil erosion and runoff in the US exceeds $44 billion a year.

**Desertification**
The United Nations Environmental Program defines "desertification as" impoverishment of arid, semiarid and subarid ecosystems by the impact of man's activities. This process leads to reduced productivity of desirable plants, alterations in the biomass and in the diversity of life forms, accelerated soil degradation, and increased hazards for human occupancy.



Cattle production is the primary factor in all five causes of desertification: overgrazing of livestock; overcultivation of the land; improper irrigation techniques; deforestation; and prevention of reforestation.

Each year nearly 1.5 million acres of land around the world are virtually lost to desertification. 52 million more acres become so eroded that they can no longer be grazed or cultivated.

**Dwindling Freshwater supplies**
50% of all the water consumed in the US is used to grow feed and provide drinking water for cattle and other livestock.

Producing a pound of beef protein often requires up to 15 times more water than producing an equivalent amount of plant protein.

Excerpted from What's the Beef and Who Pays. © EarthSave Foundation

## Livestock are the best recyclers on earth

Reduce, reuse and recycle are the three 'Rs' of the nineties. Richard Johnson believes that livestock are the best recyclers on earth.

"Livestock are the most innovative recycling mechanisms that we've ever come up with," says Johnson. Head of Soils Branch of the Alberta Environmental Centre. "They convert vegetable matter, indigestible by humans, into a high quality protein food. Then the waste, mostly as bedding and manure, goes back into the soil to nourish it."

According to Johnson, loss of topsoil is a critical environmental problem. "But what people don't realize," he says, "is that the solution to this problem lies in perennial forage crops, grown to feed livestock." Johnson points out that grasses, alfalfa and clover, used either as pasture or as feed, increase soil nutrients and water retention to maintain rich topsoil.

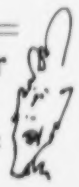
When it comes to "reuse", livestock production is second to none. Cattle, sheep and hogs derive nutrients from our waste. Less than half of our field crops are edible by humans. The leaves, stem and chaff of crops, along with by-products from

food processing, such as flour, malt and sugar beet operations, are fed to livestock.

Livestock processing is a model of waste management because very little is wasted. Every part of the animal is reused. "We're all familiar with wool and leather products," notes Gail Royle of Canada Packers, "but the number and diversity of everyday items which use animal by-products would surprise most people."

- Edible oils are used to make shortening and frying oils.
- Tallow from rendered fat provides the cosmetic industry with glycerin for lipstick, face and hand creams, soaps, shampoos and toothpaste.

**"Wow! We use animals for a lot of different things."**



- Inedible fats also are used in detergents, liquid soaps, fabric softeners, candles, tires, adhesives, crayons, chalk, explosives, inks and matches.
- Gelatin from bones and hog hides is an important ingredient in many foods including marshmallows, ice creams and gelatin products. It's also used in animal feeds, dog chews and in the production of photographic film.

**Life-saving source**

Livestock are the source of hundreds of life-saving and life-improving drugs. "Certainly insulin is one of the more high profile drugs derived from livestock," says Jan Eno, Director of Research, Education and Services for the Canadian Diabetes Association.

According to Eno, one-third of Canada's 500,000 diagnosed diabetics take insulin. "Prior to the 1980s, people with diabetes relied totally on insulin supplies extracted from beef and pork pancreas," states Eno.

She further explained that today's improved technology has developed a method of producing insulin more closely resembling that of humans'. This newer "human pattern insulin" accounts for about half of the insulin market. The remaining half continue to use animal insulin.

Other drugs made from animal extracts are used in cancer research, in the treatment of allergies, anemia, respiratory diseases, thyroid irregularities and in the control of blood coagulation during operations.

"Reduce" has been the watch-word of the meat industry for more than a decade, most noticeably in the reduction of fat. Beef today is 50% leaner than it was 10 years ago. Recent nutrient tables released from Health and Welfare Canada show pork to be 23% leaner. This lean trend reduces the amount of fat that goes into our bodies and the amount scraped into the garbage.

Changes at the packer and retail levels have reduced 'plate waste' considerably. Twenty years ago very few boneless cuts were found at the retail counter. Today 75% of retail meats have had the bone removed and reused for animal feeds. The fat trim has been reduced from more than 1/2 inch to 1/8 inch in most chains. Much of the internal seam fat also is removed. All these improvements translate into less household garbage.

Reduce, reuse, recycle ....when it comes to the three 'Rs', the meat industry deserves a passing grade.

Reprinted with the permission of the Beef Information Centre

## WHAT'S THE BEEF?

**Pollution**

Cattle and other livestock account for twice the amount of pollutants as come from all US industrial sources.

The organic waste generated by a typical 10,000-head feedlot is equivalent to the human waste generated in a city of 110,000 people.

The nitrogen from cattle wastes is converted into ammonia and nitrates and leaches into ground and surface water, where it pollutes wells, rivers, and streams, contaminating drinking water and killing aquatic life. Nitrates can cause irreversible nervous system impairments, cancer, and "blue baby" syndrome.

Manure nitrogen also escapes into the air as gaseous ammonia, a pollutant that causes acid rain and other forms of acid deposition. The ammonia that the livestock industry discharges into the air is the single largest source of acid deposited on Dutch soils — doing more damage than the country's cars or factories.

**Energy**

Oil is used in the livestock industries for fuel for transport and tractors, chemical fertilizers, and pesticides; so much, in fact, that animal products could be considered petroleum byproducts.

To produce a pound of grain-fed beef in the US takes the equivalent of one gallon of gasoline.

To produce one calorie of protein from beef takes 78 calories of fossil fuel. To produce one calorie of protein from soybeans takes two calories of fossil fuel.

Excerpted from What's the Beef and Who Pays? © EarthSave Foundation

# FOOD FROM THE SEA

## *BOUNTY OF THE SEA*

Fish is one of the most widely distributed food commodities in the world. For many developing countries, fish is a vital item of daily diets, accounting for more than 40 per cent of the animal-protein supply for over 2 billion people.

Along with pollution, warns the UN Food and Agriculture Organization, overfishing threatens the future productivity of the seas. Most scientists agree. The global commercial fish catch is nearing the maximum sustainable yield of 100 million tonnes that the oceans can produce each year. Signs of stress are obvious. At least 42 stocks are already over-exploited or depleted.

This comes as a result of a dramatic increase in the total world fisheries catch in the last few decades. Strong and sustained demand for human consumption and livestock feed, in both the developed and developing world, has pushed fishery resources to their limits. The annual marine catch increased by another 30 per cent over the last decade, with the Commonwealth of Independent States and Japan together landing one fourth of the world's total. Further long-term increases, however, are not expected, since many regional fisheries now show signs of drastic overfishing. Most demersal fish stocks (cod, hake, haddock) are fully fished. And much of the increases of the 1980s came from bigger catches of pelagic species, such as sardines and anchovies. The consequences of such heavy pressure on the stocks are not known.

This crisis situation prompted nations to protect their marine resources from international fishing fleets. By 1980, almost all coastal states had taken legal steps to extend their authority to 200 miles, thereby asserting national ownership over 90 per cent of the world's fisheries resources. But asserting national rule, while a precondition for national management, does not itself ensure more efficient conservation and use of fish stocks. Indeed, many developing countries with small navies or coastal patrols are having a hard time enforcing quotas. They also lack the programs, institutions and funding to fulfil their obligations. Even when such controls are in place, say experts, most often efforts have focused on symptoms rather than on causes. According to most marine scientists, the world has yet to grasp the importance of the oceans and of human impacts on them, as well as the concepts and tools needed to manage relations between people and oceans.

In response to challenges posed by the pressures of increasing demand for fish on stocks already overexploited, the 1984 FAO World Conference on Fisheries endorsed a strategy for fisheries management involving five programs of action. These principles and guidelines still remain valid. "Most relevant to the issue of sustainable development are principles and practices for the rational management of fish resources, and the special role and needs of small-scale fisheries. In this respect, there is an urgent need to involve local communities in the management of marine resources and to rally worldwide efforts to reduce marine pollution and conserve the variety of marine life.

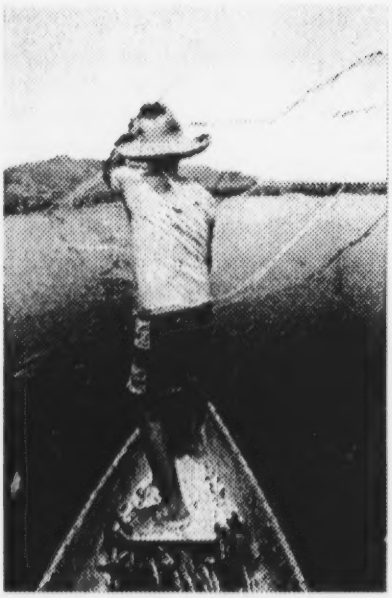


Photo: Peter Bennett, CIDA

People the world over, concerned about the extent of destruction, are pressing for major changes. In 1988, 30,000 people formed a 25-mile chain in Sylt, Germany to protest North Sea pollution; 40,000 volunteers showed up to clean beaches in the U.S.; up to 100,000 Estonians, Lithuanians and Latvians linked hands along the Baltic Sea to call for a cleaner environment. Such actions show governments just how serious people are about better protection of the oceans.

Reprinted from Development, Spring 1992, CIDA

# Stop the predators killing Canada's fish

By Richard Cashin
St. John's

The declaration of Canada's 200-mile fisheries-management zone sparked great hope and optimism among people in Newfoundland and Labrador.

More than 20 years of overfishing by foreign fleets had ravaged our traditional fishing stocks, especially cod and flatfish. Catches of the great northern cod had fallen to less than one-quarter what they had been in the 1950s. Our deep-sea fishermen were catching far less flounder and sole than just a decade earlier.

But all this was supposed to change in 1977 when, amid great hype, Canada implemented the 200-mile limit. Federal and provincial governments of the day said that once the stocks were rebuilt, Canadians would be unable to catch all the fish — especially northern cod.

The first few years looked promising, but it quickly became apparent to fishermen, especially those in the small-boat fleet, that Department of Fisheries and Oceans cod projections were grossly overestimated.

The fishermen's union repeatedly advised the department and successive fisheries ministers of the miscalculation. It also repeatedly pointed out the Achilles heel of sound fisheries management: the fact that our continental shelf extends beyond 200 miles, so the so-called "nose and tail" of the Grand Banks was still vulnerable to the onslaught of the foreign fleet.

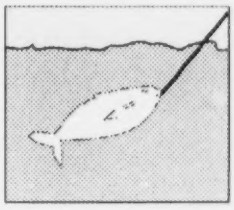
Starting in the mid-1980s, foreign ships escalated their fishing in this area; the Spanish and Portuguese were particularly merciless. They ravaged the flatfish — flounder, sole and yellowtail — that were the traditional mainstay of Newfoundland's deep-sea fishery, and caused untold destruction in the area outside the 200-mile limit that fishermen call the "nursery" for these fish.

From 1986 to 1990, the European Community took as much as 20 or 30 times its annual quota of these valuable stocks, while Canadian quotas were being cut in half. The first to bear the brunt of this assault were the small-boat fishermen on the coast of Labrador and the northeast coast of Newfoundland, who continually had to increase their efforts to bring home an ever-dwindling catch.

Then in early 1990, the Atlantic fishery was rocked by the closure of four major deep-sea plants in Newfoundland and two in Nova Scotia. Thousands were thrown out of work. Some thought then that we had hit rock bottom, but the freefall has continued. Last year, the inshore fishery in Labrador was the worst in history, and most areas of the northeast cost of Newfoundland were not much better.

Now the latest scientific advice from Fisheries and Oceans is to make further drastic cuts in Canadian quotas. This will inevitably mean more plant closures, more trawlers taken out of service, more empty nets for inshore fishermen. Just last week, Fishery Products International closed its plant at Catalina, the biggest in Newfoundland. In the wake of the latest scientific report, no one knows whether it will reopen.

It frustrates fishermen and fish-plant workers to have to absorb this kind of pain while the stocks we are trying to protect are being continually battered by two unchecked predators: the foreign fleet and a seal herd that's increasing at a tremendous rate.



Newfoundland fishermen once maintained a predator-prey balance between seals and fish, but the once-thriving seal industry was destroyed more than a decade ago by the campaign of anti-sealing groups. Since then the seal population has jumped to the point that federal scientists estimate seals kill 1.5 million tonnes of fish a year — 50 per cent more than the total annual groundfish harvest in Atlantic Canada.

Even so, foreign fishing without a quota caught 47,000 metric tonnes of northern cod alone last year. In total, European vessels caught 164,000 metric tonnes — 360 million pounds — of fish on the nose and tail of the Grand Banks. That's eight times their quota, enough fish to save every closed fish plant in Atlantic Canada, meaning at least 5,000 jobs in a province with an official unemployment rate approaching 20 per cent.

While the foreign fleets were fishing out of control, the weight of the Canadian navy was brought to bear on more than 20 Newfoundlander longliner captains who were driven by empty nets, heavy debt loads and desperation to fish in a zone where they had no quota.

The Canadian fishing industry simply can't withstand the assault on our resources. This is a question of Canadian sovereignty. Canada has to assert control of fish stocks to the edge of the Continental Shelf or our fishery will not survive.

Over the years, Ottawa has insisted that jurisdiction over fisheries management is clearly federal, but with jurisdiction comes accountability. Canada obviously has to take measures that will allow for the rebuilding of our stocks. But we can't just manage the fish — a program is needed to assist the thousands of people who are the victims of the decline of our stocks, to enable them to ride out this difficult period.

But all this will be futile unless Ottawa also asserts its sovereignty, takes control of the fish stocks off our shores, and introduces a controlled cull that will stabilize the seal herds at ecologically sound levels.

The fate of our province hangs in the balance.

Richard Cashin is president of the Fishermen, Food and Allied Workers.

Reprinted from the Globe and Mail, February 21, 1992

# Who had cod for dinner?

There is a crisis in the East coast northern cod fishery, and the reason isn't seals, it's overfishing.

The fact is, harp seals rarely eat cod. Less than 1% of the harp seal's diet is cod.

But although the government has recently cut quotas for northern cod, the Fisheries Minister and many fishermen seem reluctant to accept responsibility for the current situation.

They are quick to blame others — including seals.

However, the Royal Commission on Seals and Sealing reported that, in a sample of 555 harp seal stomachs which contained food, only 4 stomachs (0.7%) contained cod.

Harp seals are migratory and only overlap with the northern cod stock for a few months of the year. More than half of their annual diet is consumed outside traditional Canadian fisheries in the Northwest Atlantic.

Nor do harp seals have the voracious appetites for which they are usually credited. For their size, they eat the same amount of food as other mammals, including humans.

Despite this evidence, there have, in recent weeks, been calls for an increased seal hunt to reduce the size of the harp seal population.

You may be surprised to learn that Canada still has the largest seal hunt in the world totalling over 60 000 last year.

But some in the fishing industry are not satisfied with that.

They claim that the Canadian harp seal population has "exploded" since the European community banned the importation of pelts from whitecoat harp seal pups and since Canada banned the large-vessel commercial hunt for whitecoats.

However, the government's own result indicate that pup production did not increase markedly between 1978 and 1990.

They also claim that the seal population may have increased from 2.0 to 3.3 million animals since 1983. There is no data to support this assumption.

Even if it were true, there's no evidence to suggest that seal populations have any effect on fishermen's catches.

**"The seal supporters sound convincing to me."**

Graphic: The Africa File, VIDEA

Government scientists, and many others, have admitted for years that they do not know what the effect of reducing the number of harp seals would have on fishery yields.

In February 1991, I.H. Ni, W.D. Bowen and D.G. McKinnon, of the Department of Fisheries and Oceans, said:

"...at present there is little reason to believe that the harp seal is having a serious impact on the (northern) cod stock..." Most recently, Dr. W.D. Bowen of the Department of Fisheries and Oceans, wrote, in January 1992, that, "... interactions between seals and fisheries are complex and often misunderstood. ... The truth is we do not know what the effects of a change in seal numbers would have on commercial fisheries".

Fishermens' anecdotes aside, there is not one documented case, anywhere in the world, where it has been demonstrated that seals are competing with commercial fisheries for common prey species.

The fact of the matter is that harp seals are being used as scapegoats for failures in fishery management.

Harp seals are not the cause of reduced cod stocks, and killing more of them will not improve the situation.

The current cod crisis was predicted by scientists more than two years ago. In 1990, scientists employed by the Government emphasized "that failure to take appropriate steps to reduce current levels of fishing mortality will most probably lead to a significant continuing decline in the spawning population" (Harris 1990).

Substantial cuts to the cod quotas for 1990 and 1991 were thus recommended, but were not implemented by the Canadian government. The inevitable has happened.

While no-one would deny there is a crisis, it's interesting to note that there are still more cod today than in 1977 when Canada declared its 200-mile limit.

The obvious solution to the current cod crisis is improved fishery management, by Canada, and by all the member states of the Northwest Atlantic Fisheries Organisation (NAFO), including the European Community.

Any expansion of the harp seal hunt is bound to result in an international outcry and, possibly, in consumer campaigns against Canadian fish products — even a boycott of Canada as a tourist destination.

Such action will create additional economic hardships, not only for Canada's cod fishing industry, but for the nation as a whole.

This advertisement is sponsored by the International Fund for Animal Welfare.

We have no political affiliation and we are funded entirely by voluntary contributions.

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# Hunger in Canada

## FOOD NEEDS IN EDMONTON

To gather information about food needs, the Edmonton Food Policy Council conducted a survey in 1990 of Edmonton residents with low incomes. The project was funded by Health and Welfare Canada. Respondents with incomes at or below Statistics Canada's Low Income Cut-offs, were classified as "not hungry", "at risk", "hungry", or "very hungry", based on answers to a series of questions relating to their food needs.

Graphic: Globe and Mail

### Almost 80,000 "hungry" or "at risk"

In 1990, one in five households in Edmonton had low incomes. Of these, 28% (including 19,000 adults and 18,000 children) were classified as "hungry" or "very hungry", while 34% (including 25,000 adults and 15,000 children) were classified as "at risk" of hunger.

### Most ran out of money to buy food

Of all adults with low incomes, 72% worried about running out of food, while 62% actually ran out of money to buy food. When there was not enough money to buy food, 71% of adults cut back to a few kinds of cheaper food, 45% ate less than they should, and 23% went without food for a day or more.

### "Very hungry" go to food banks

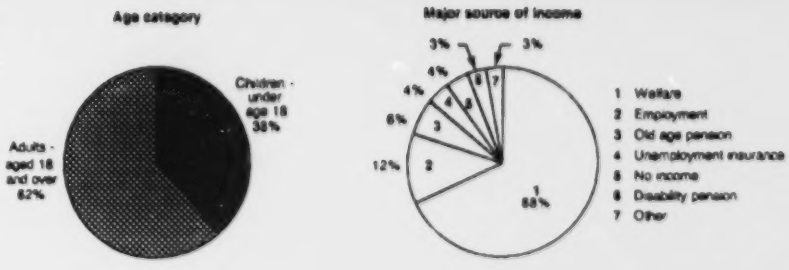
The "very hungry" were the most dependent on institutional support when they ran out of money to buy food. Forty percent of people who were "very hungry" went first to the food bank when they ran out of food or money to buy food, 25% relied on a social worker, and 23% relied on friends. About 67% of those who were "hungry" or "at risk" of being hungry turned to relatives and friends for help, while 19% relied on the food bank. Many did not ask anyone to help them, from 16% of those classified as "at risk" to 22% of those classified as "very hungry".

### Coping strategies

When asked to select strategies used to obtain food when money for food was running out, most adults with low incomes indicated that they have purchased less expensive food. The majority of "hungry" and "very hungry" adults indicated that they have also borrowed money or food from friends and relatives.

Institutional support was also common among those classified as "hungry" or "very hungry". More than one-half of these had obtained food

SOCIAL TRENDS — Recipients of food from food banks, 1990




Source: Canadian Association of Food Banks

Graphic: Canadian Social Trends, Statistics Canada



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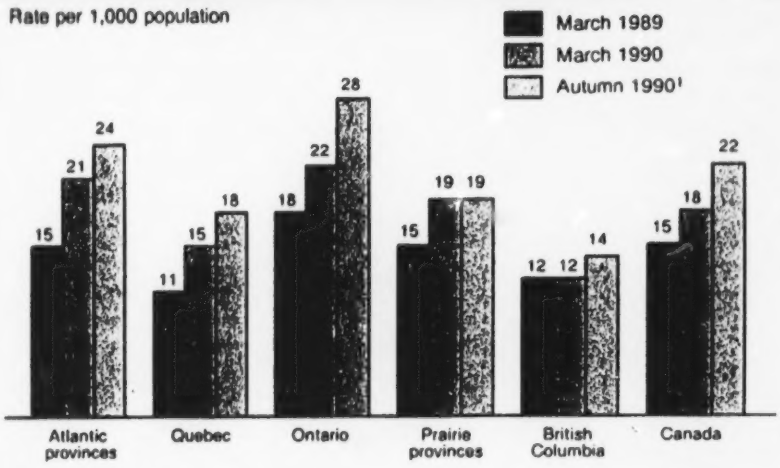
vouchers from a social worker, while almost one-half had gone to a food bank. Selling or pawning possessions to get money to purchase food (52%), going to a soup kitchen for a meal (30%), or purchasing food on credit (17%), were more common activities among those who were "very hungry".

**Food shortages most common among lone parents**

Families with children who are in a low-income situation, especially lone-parent families, have the most difficulty securing food. Among people with low incomes, 69% of lone-parent households and 60% of two-parent households were "hungry" or "very hungry". Fifty-five percent of unattached individuals and 33% of couples without children were "hungry" or "very hungry".

**SOCIAL TRENDS** Recipients of food from food banks, by region




¹ Preliminary estimates.
Source: Canadian Association of Food Banks.

**Hungry children**

Two-thirds of households with children had adults who were classified as "hungry" or "very hungry", while the children in these families were mainly "at risk" of hunger (49%) with only 17% "hungry". Still, 56% of the children living with adults who were "very hungry" were classified as "hungry".

One-half of families with low incomes in Edmonton could not afford to give their children good quality food or a variety of food, and 18% cut the size of their children's meals because there was not enough food. In Edmonton, 15% of households reported that their children were hungry, but almost none reported that their children went without food for a day or more.

**"I guess I never thought about how much hunger there is in Canada."**

Children in families receiving welfare benefits or those not living in subsidized housing tended to be higher on the hunger scale.

**Welfare families insecure**

People receiving welfare (social assistance) were twice as likely as other people with low incomes to be classified as "hungry" or "very hungry". Seventy-four percent of households receiving welfare benefits were "hungry" or "very hungry". The majority (56%) of low-income households with at least one employed member were also hungry.

**Shelter costs a problem**

Households with low incomes whose members were not living in subsidized housing were twice as likely as those in subsidized housing to be classified as "very hungry". Those with low incomes who were living in subsidized housing paid an average of 34% of their gross monthly income for shelter and utilities, while those not in subsidized housing spent 48%.

**Solutions chosen by respondents**

Respondents were asked what would help them feed themselves and their families better. Answers included having a job (22%), higher welfare benefits (20%), lower cost of living or lower food costs (17%), more education or training (13 %), higher wages (12%), lower cost housing or utilities (8%), and other needs (8%). When asked what it would take to ensure that they would always have enough good food to eat, 69% said more money, 33% said a job or a better job, and 14% said help with shopping or planning.

*Jillian Oderkirk is an Assistant Editor with Canadian Social Trends.* *Research assistence was provided by Katherine Nessner.*

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## Food Relief in Toronto

The Daily Bread Food Bank in Toronto, the first food bank in Ontario, opened in 1984. Since then, this operation has been joined by others in Toronto, such as the North York Harvest Food Bank, and the Second Harvest Food Bank.

**Majority are families receiving welfare**

Records from the Daily Bread Food Bank indicate that 81,000 people received food aid in the form of groceries or meals in January 1990. The largest single group receiving groceries was families with children whose major source of income was welfare. In January 1990, more than one-half of all households that received groceries from the Daily Bread Food Bank were families with children who were receiving welfare benefits (33,340 households), while 16% were similar households without children. Almost 20% of those receiving food relief were households whose major source of income was from employment.

**Main activity child care or job search**

The main activity of those receiving grocery baskets from the Daily Bread Food Bank in 1991 was caring for children (26%), followed by looking for work (20%), working at a job or business (18%), attending school (14%), staying at home due to illness or disability (13%), staying at home due to retirement (4%), and other activities (5%).

**Education level rising**

People receiving grocery baskets from the Daily Bread Food Bank were more highly educated in 1991 than they had been in 1987. For example, 9% had graduated from college or university (up from 4% in 1987), 9% had some college or university (up from 4% in 1987), and 22% had graduated from high school (up from 5% in 1987). (In 1989, one out of every five people who went to the food bank were taking courses to improve skills and employability.)

**Most still run out of food**

Most people receiving groceries in 1991 indicated that, even with aid from the food bank, they sometimes ran out of food because they did not have enough money to buy food. Many indicated that this was a problem that occurred daily (12%), weekly (21%), monthly (23%), or rarely (25%). Just 20% indicated that this was never a problem. Those with larger families and those in private rental housing were more likely to report food shortages.

**Security of tenure a problem**

In 1991, most recipients of grocery baskets (61%) had moved an average of 2.1 times in the past 12 months indicating that security of tenure may have been a problem for many.

Of all recipients of groceries from the Daily Bread Food Bank, 6% were living in a rooming house without cooking facilities or were homeless (does not include those benefitting from meal programs), 17% were living in rooming houses with cooking facilities, and 14% in basement apartments. About one-half lived in an apartment or flat, while 12% lived in a townhouse, duplex, or single-family home.

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# *Inner-City Hunger*

By Diana Ballon

Four years ago, Janice could never have imagined herself at a food bank. In 1986, she was working as a graphic artist in Toronto and had a stable relationship with a man she'd known for nine years. Then, overnight, things changed.

Janice was struck by a truck while crossing the street. Since then she has had to deal with years of rehabilitation, the loss of her job and her relationship and severe bouts of depression.

Now at age 29, she is working hard to build her life again. "The whole system is all new to me," she says. "It's like walking back out into the world almost four years later."

By 4:45 p.m. on a Friday afternoon, Janice (she does not wish to give her last name) is one of 134 people who have come in the past five hours to receive "emergency groceries" at Stop 103, one of about 200 food programs in Toronto. Nearly half of these provide emergency food in the form of meals, such as soup kitchens.

Is her story common? According to Derek Sweeney, director of volunteers at the Daily Bread Food Bank, Janice's situation is not unusual. You can have a home, a job, a family, and then fall right down, says Sweeney. There is not a good social safety net to help you get back up, he says. People turn to the government for support, but only get pushed down further.

Welfare recipients are discriminated against, seen as lazy, and "discarded when they need help the most," Sweeney says. Rather than getting support and encouragement, they are confronted with long line-ups at food banks, welfare offices and employment centres. It's a "tremendous affront to people's dignity," he says.

Dignity is all that some may have left.

Success is promoted so much in this society that the public fails to understand the reality of these people's lives, Sweeney says. But he is optimistic. Two hundred and fifty thousand households responded to the last food drive in Toronto.

When I first see Janice, she is sitting demurely, head bowed, her eyes fixated on something she obviously doesn't see. There is a lack of confidence, a nervousness. She wears an Indian scarf around her neck, blue with thin gold stripes, which looks as if it has been selected carefully.

The food bank has been set up in the basement of a church. Janice sits on one of two church pews facing each other in the centre of the room, where clients wait patiently to be served. Newspapers are scattered across a table and three bins in the corner hold leftover potatoes, squash and some dried-up parsley. A volunteer behind the desk registers people as they enter and interviewers speak with clients behind partitions.

A man calls out Janice's name from the back of the room. She quietly excuses herself and goes to select her bagful of groceries: rice, pasta, a can of beans, soup, four eggs, bread, powdered milk, a bag of sugar, some cheese and — she's lucky today — a small piece of meat. I ask Janice how long the food will last. She guesses seven or eight days. Her next welfare cheque is not expected for at least two weeks. You can't afford to think about stuff like that, she says. "I'll take it one day at a time."

Janice says it took her four days to get up the courage to come to the Stop, but for her it was the only way out. "I'm not used to handouts," she apologizes, and after a pause, "I accept them gratefully."

She remarks on the caring people she finds at the Stop. "I was waiting to be barked at," she says, after her experience at a welfare office which she describes as a zoo.

Sixty-five per cent of people using food banks are on welfare, says Gerard Kennedy, executive director of the Daily Bread Food Bank. But the level of welfare payments is inconsistent with people's needs, he says. They reflect only what the government can pay.

Victor Prado, a 31-year-old Peruvian, is chatting with a friend as he waits to be served.

He trained as an electrician but has not been able to find work for eight months. For now, he lives off unemployment insurance, over a third of which he sends to his family each month. Prado says if he has not found work by the time his unemployment insurance runs out, he will have to apply for welfare.

At least he has a work permit. Ten per cent of people coming to food banks in Toronto are refugees on welfare because they have not yet received work permits. This number is disproportionately high, Kennedy says, considering that a lot of refugees are from two-parent families with above-average education, and are usually willing to take jobs other people will not.

As I leave the food bank, I notice a group of teenagers laughing in the corner. When I ask if any of them would like to speak to me, a bright-faced young woman jumps up.

As we talk behind a partition, one of the staff comes over to say hello. The teen greets him warmly, telling him that she has gone back to school and has now found a place to live. Rachel Anne Brown, 16, says she was kicked out of the house a year ago. "My parents got fed up with me," she says. "I think they have a lot of problems."

Since then she says she has lived on the street, spent a couple of weeks in a tent and stayed at friends' houses. Brown has now found a place in a rooming house and attends some Grade 9, 10 and 11 classes in a school where "people don't have a lot." At least this school gives her a free lunch, she says. Otherwise, she survives on welfare, over half of which goes to paying her rent.

Brown says that when she first came to the Stop she was worried they wouldn't serve her. "I felt maybe other people needed it more than me, even though I was hungry," she says. Forty per cent of the people who go to food banks in Canada are under the age of 18.

This year marks the 10th year of food banks in Canada. There has been a dramatic increase in the number of food banks since the first one opened in Edmonton in 1981. Now there are at least 1,100 emergency grocery programs in Canada. Some 1.4 million people use emergency food outlets each year. That number is expected to keep growing. Fewer mentally ill are being institutionalized, more physically disabled are living on their own and there are more single parent families: a disproportionate number of these groups need assistance.

But this huge increase is nothing to boast about. "The more successful food banks become, the easier it is for us to accept them and the harder it is for us to be outraged by them," says Rick Myer, executive director of the Stop.

Myer says food banks are an inefficient way to help people. He uses a $2.39 can of beans and weiners to explain. By the time the can has gone from store to consumer, been donated to fire hall or church, and then trucked to the Daily Bread Food Bank, a collection and distribution depot, and finally to the Stop, the can could end up costing $20. Society needs to find a way to give people the means to buy their own groceries, says Myer, so they can have the dignity of taking care of themselves.

Diana Ballon is a Toronto writer and a former CCI staff member.

Reprinted from Crossworld, Summer 1991

# THE CANADIAN FARM

## The Price of Profit: are we trading away our food security?

Food security is a concept many people in Canada take for granted. Blessed with abundant farmland, advanced machinery and knowledgeable, resilient farm families, Canada is often viewed as the "breadbasket" of the world. It's a reputation that hasn't come about by accident. We live in a country that exports roughly 80 percent of the food it produces.

Even though we ship so much out of the country, there seems at first glance to be more than enough left within our borders to feed our own people. But is that truly the case? The rapid increase in the incidence of hunger and poverty over the past decade is startling. Food banks are a fact of life, and provide a stark contrast to massive, well-stocked supermarkets.

While millions of Canadians go hungry, family farmers across the country are going broke because they can't make enough money from the sale of the food they produce to break even. Though the prices in grocery stores always seem to be going up, it isn't because farmers are getting higher prices. In fact, farm gate prices (the amount farmers receive for the food they produce) represent a smaller and smaller fraction of the price you pay at the check-out counter. A one kilogram package of spaghetti priced at $2.99 contains just 24 cents worth of durum wheat — the only ingredient; beef for which the farmer receives $3.67 per kilogram retails at $8.25 per kilogram.

Farm gate prices remain low because of corporate concentration in the food industry. For instance, seven grain companies (Archer-Daniels Midland, Bunge, Cargill, Continental, ConAgra/ Peavey, Louis Dreyfus, and Mitsui) virtually control world trade in grain. This leverage allows corporations to effectively set world grain prices, and it is in their interests to drive raw grain prices down at the farm gate — not only does that reduce their cost of the raw material for processing, it also helps depress livestock and poultry prices. Similar corporate concentration exists in commodities like poultry and eggs; red meats and milk. Many of these same companies also dominate processing sectors that take those raw agricultural commodities and "add value" to them through various stages in the food chain from field to table.

FACT FILE

The average Canadian farm family will earn about $13,000 after expenses and depreciation of equipment in 1991.

From Canada and the World, December, 1991

These large multinationals make their money through the sale of commodities; the higher the sales volume, the higher the profit, regardless of the price. To achieve higher volume, it makes sense to expand their potential market across national boundaries until it becomes, in effect, a global market. It also makes good business sense for these companies to buy raw commodities from farmers at the lowest price possible and to process those products using cheap labour. Inevitably, farmers are pitted against each other in a circle of competitive poverty, undercutting each other's price and driving down everyone's incomes. This happens both within individual countries and between countries, as corporations can source commodities wherever they are cheapest. The same process happens with labour, as workers compete for lower wages.

There are exceptions to these rules, however. Believing that food isn't 'just another commodity', some governments have instituted policies that build food security by promoting farmer security. In some developing countries, for instance, governments have created national marketing systems that buy produce from farmers at higher than 'market' prices then sell it to consumers at lower, subsidized prices. In Canada, the dairy industry is governed by a system of supply-management. Though not perfect, this system ensures that farmers get a fair price for their milk, and that there is neither to much nor too little supply to match demand. The Canadian Dairy Commission along with other marketing institutions like the Canadian Wheat Board and the Canadian Egg Marketing Commission were established to ensure that farmers' interests were protected in a global market dominated by a handful of large, multinational corporations.

That all may change however, depending on the outcome of negotiations in international trade agreements such as the General Agreement of Tariffs and Trade (GATT) and the North American Free Trade Agreement (NAFTA). By imposing "international trading rules" such as those contained in GATT and NAFTA, the market economy is attempting to shoulder its way past national boundaries. As these agreements become the final authority in determining price, quality and quantity of food; the role of national governments is diminished. National policies which emphasize social concerns are increasingly disallowed as being "unfair trade barriers" that restrict the economic rights of corporations.

Supporters of unrestricted trade in agriculture argue that it will promote food security by lowering food prices. However, when farmers earn only 6 cents for the wheat in a $1.39 loaf of bread, cutting the price of wheat by half won't make much difference to consumers ... though

it might bankrupt many farmers. Already, Canadians spend a smaller percentage of their income on food than people in any other country of the world except the U.S. Critics charge that under free trade, governments hand over control of political and social policy to the corporate sector. Because corporations make economic decisions based on their need to generate a profit, they don't necessarily operate in the best interests of society at large. Countries which agree to tailor their national policies to accommodate the demands of the global market are in effect surrendering their sovereignty. They are replacing their duly-elected, publicly-accountable governments with non-elected private governments accountable only to corporate shareholders.

Food security is one of the first casualties of the global market, because the greater the distance food is transported and the greater the number of steps involved in processing and handling, the greater the likelihood of unexpected disruptions or sharp price increases. Factors involving weather or social strife can cut off supplies and boost prices for consumers virtually overnight. Even if everything remained stable, the additional costs involved in packaging, transportation and advertising all add to the cost of food on supermarket shelves.

Under the terms of GATT and NAFTA, Canadian food policy will no longer be effectively set on a national basis, but instead will be governed by international trade rules which operate solely on a market basis. Because the market is so heavily concentrated in so few hands, only a small minority benefit from such an arrangement, while the vast majority are deprived of the political and social decision-making power they now possess.

by Terry Pugh, National Farmers Union

Reprinted from World Food Update 1992

# Index on Farming

by Terry Pugh

• Over half of all farm families in Canada now report off-farm income. Over 32% of all family farm income is now generated through off-farm employment. In other words, farm men and women must subsidize their farm operations by wage labour simply to try to make ends meet. Market returns for the commodities they produce on the farm do not cover the cost of producing those commodities.

• Farmers are caught in a "cost-price squeeze" because they are "price takers". They must buy their inputs from a relative handful of corporations, while selling their commodities to a small number of processing and trading companies. They have little or no control over the final price paid for food at the consumer level. For example: A$1.39 loaf of bread contains only 6 cents worth of wheat; A one-kilogram package of spaghetti priced at $2.99 contains 24 cents of durum wheat; A bottle of beer retailing for $1.10 (excluding deposit) contains 1 cent worth of barley (the bottle cap costs more); Beef for which the farmer receives $3.67 per kilogram retails at $8.25 per kilogram;

• Profits in food processing industries in 1989 were $1.1 billion after taxes. Canada's largest 10 food and beverage manufacturers had a return on investment in 1990 of between 6.54% (Canada Packers) and 56.2% (Kraft Foods). Canada Safeway reported a return on investment capital of 22.3% and A&P Stores had a return of 23.1% in 1990.

• The return on invested capital for Canadian farms in 1990 was 2.7%.

• An estimated 4,000 families are forced out of farming every year, and the rate of exodus is accelerating. A recent study revealed that as many as 48,000 Canadian farmers are in imminent danger of going under. This is bad news for service industries in rural communities, since, on average, one small business folds for every seven farms that go under.

• Small towns lose not only businesses, but people. Public institutions like post offices and schools are closed down, and volunteer organizations and other community groups gradually cease to function as de-population takes its toll.

• Stress on farm families labouring under a heavy debt burden results in spousal and child abuse, alcohol and drug problems, and can often lead to suicide. Suicide rates among farmers are among the highest in the country.

• Since the Canada-U.S. Free Trade Agreement came into effect in 1989, there has been a steady erosion of Canada's orderly marketing agencies and supply-management boards. Using the rationale of trying to make Canadian processing companies "competitive", the Canadian government has allowed prices for farm commodities to sink to unprecedented low levels. Despite the fall in farm returns, prices to consumers for food products at the retail level have continued to rise. The proposed North American Free Trade Agreement involving Mexico, and the latest deal worked out at the General Agreement on Tariffs and Trade (GATT) talks extend the corporate free trade agenda into the global arena.

Terry Pugh is editor of the Union Farmer, the monthly newspaper of the National Farmers Union.

Reprinted from Canadian Forum, January/February 1992

# PLOWED UNDER

*Canadian farmers are ready to face grasshoppers, drought, hail and frost, but a different kind of enemy is forcing many of them out of business.*

All across the West, farmers this fall have been meeting to demand more help from governments. The reason for their fear and anger is not crop failure. Forecasters, in August, were predicting the biggest crop in history. The reason is that the biggest crop is being matched by close to the lowest prices for wheat and other farm commodities. The Canadian Wheat Board, which since 1935 has established the price for our wheat, set this year's initial price at $95 a tonne, the lowest in 19 years. That works out to little more than $2 a bushel, a lower price than farmers were getting in the boom years after World War I.

In those days, however, a farmer could buy a used car for $300 and a harvester for $1,000. In 1991, a good used car costs $10,000 and basic farm machinery sells for up to $150,000. Today's rock-bottom prices have dried up cash flow, driven farmers into debt, and forced many off the land.

With bumper crops this year, Canadian farmers should be in clover. It hasn't happened largely because they are caught in the crossfire of a subsidy war. Subsidies are grants handed out by governments to keep the prices of commodities down, making them more competitive in world trade. But subsidies distort the prices which supply and demand would dictate in a free market. They also encourage over-production and increase the tax burden for consumers. Everyone agrees they are bad and should be eliminated.

The trouble is that subsidies are habit-forming. The 12-nation European Community (EC) subsidizes its farmers to the hilt, urged on chiefly by a powerful lobby of French small landholders. This fall, 150,000 of them marched on Paris demanding no change in the farm subsidy system.

Under the EC's Common Agricultural Policy, support for farmers is about $50 billion annually. That helps them to produce each year 19 million surplus tonnes of wheat as well as other farm products.

The United States has its own farm lobby, also powerful. Between 1986 and 1989, farmers persuaded federal and state governments to shell out an average of $58.5 billion a year in subsidies. That made American farmers competitive with their EC counterparts and allowed both groups to sell surplus wheat and other commodities at giveaway prices to markets in the Middle East and Asia. It also forced the price of wheat far below the cost of production for Canadian farmers.

The U.S. wants its subsidy war with the EC to end, and the issue has come to a head in the current round of world talks on lowering trade barriers. These are conducted by more than 100 nations under the General Agreement on Tariffs and Trade (GATT). GATT members made good progress on many points in the ongoing talks but stumbled over the prickly question of farm subsidies (Canada and the World, Feb., 1991). The fate of the talks now hangs in the balance, but there is still hope that some compromise on subsidies can be reached by the end of the year.

Canada is a member of the "free-trading" Cairns group of nations which wants the deadlock over agriculture to end, and blames the European Community for the fact that the impasse continues. Federal Agriculture Minister William McKnight warned the EC recently that Canada will retaliate if there is still no truce in the grain subsidy war by the new year.

Canadian farmers, meanwhile, are in a financial straitjacket, partly because of losses on grain sales and partly because of a heavy debt load. When they're in difficulties, they depend on Ottawa and the provinces to bail them out, and this process has been going for years. In the early 1980s, governments accounted for 25% of average farm income. By last year, the figure had risen to 41% of income. That is below the 48% of income paid in subsidies to EC farmers but a good deal more than the 30% of income American farmers get from governments.

This year Ottawa planned to spend about $425 million on aid to farmers who asked for at least $1.3 billion. In October, just before an election in which Saskatchewan Premier Grant Devine had his back to the wall, his Tory allies in Ottawa announced an $800-million farm aid package, much of it destined for Devine's province. Opposition parties condemned the payment as an attempt to buy votes, and as being too little, too late anyway. It tops off about $17 billion in government aid to farmers since 1980.

Ottawa would like to end emergency bailouts and hopes this will be the last one. With this in mind, the government announced new farm relief programs this year as part of a "safety net" scheme. The plans offer a type of insurance against low incomes.

The farm income crisis isn't confined to the prairie provinces: farmers in other provinces are going through equally tough times. Thousands of Ontario farmers, for example, have lost their land and livestock in the past ten years. They are being plowed under by high interest rates, a high dollar, increased costs and taxes, and more U.S. competition. Up to 30% of them are failing to meet their debt payments.

Farmers in Ontario and in every other province say all they want is a fair price for what they produce. Ottawa is counting on its new "safety net" system to provide that income. Next year, the scheme will meet its first real test.

**SUGGESTED ACTIVITIES:**

1. A farmer gets 3 cents from a loaf of bread that sells for $1.49 and 7 cents out of a box of cereal that sells for $2.49. What other links in the food chain get the rest? Should the farmer get more? Should the consumer pay more? Discuss.
2. Check news reports this month or in January to find out what happened in the GATT controversy over farm subsidies. Report to your class on what you find.

CHARLES A. WHITE

Reprinted with permission from Canada and the World Magazine [Dec. 91], Oakville, Ontario

# BACKGROUND TO AN ISSUE

## Food Irradiation: Who Profits? Who Loses?

Companies and governments that produce and market irradiated foods and technologies will see the largest profits. Multinationals involved in food distribution and production will be able to 'rescue' spoiled food and sell it; Agencies involved in other aspects of the nuclear industry — such as power plants — will expand their market for nuclear waste products, since irradiation facilities use these in the irradiation process. With orders for nuclear power reactors diminishing worldwide, the nuclear industry is promoting food irradiation as a way of keeping itself in business.

Food irradiation will adversely affect the environment. Radioactive materials will be transported more frequently, increasing dangers of accidents. More radioactive waste will be generated, causing additional storage problems.

Consumers, small farmers and poor countries may be the biggest losers. Since laws regulating whether or not irradiated food will be labeled are unclear, consumers will be eating this food without knowing if it is irradiated or not. Poor countries may spend large sums to acquire irradiation technology, only to find that it is dangerous to the environment and to workers.

For countries suffering from droughts and enormous post-harvest losses, etc., food irradiation may appear to offer some solutions. But introducing irradiated products only takes the focus off the need for structural changes that ensure all people's rights to healthy food. And so, the questions remain.

## FOOD IRRADIATION: QUESTIONS TO USE WITH GROUPS

1. How safe and nutritional is the food that has been irradiated? How will the vitamin losses affect the health of the poor and those people with vitamin deficient diets?
2. How safe are the people that are working in food irradiation facilities?
3. How much will it cost to save food using irradiation as compared to other methods for providing fresh food?
4. How informed will people be — particularly those who are poor and hungry — about the facts and dangers of irradiated food? Will labels be required? Will there be global agreement on safety standards?
5. What will the impact on small farmers and indigenous food cultivation, harvesting, processing, storage and distribution systems be? What will the social and environmental costs be?

Reprinted from the Tribune, March 1990

# Food for thought in a world of hunger and disease

by Ron Thomas

American astronauts have eaten irradiated food in space. Back on Earth, food irradiation is touted by such highly respected bodies as the United Nations' World Health Organization as a safe and effective means of controlling food-borne disease, reducing spoilage, and providing an alternative to potentially toxic pesticides. Currently, more than 30 countries have cleared some 40 food items for food irradiation.

Yet skeptics continue to worry that the process causes potentially hazardous changes in the molecular structure of foods.

Why? Misunderstanding and lack of knowledge, according to Les Ferrier, a food scientist at the University of Guelph, in Guelph, Ontario. "The most common question I'm asked is, 'How radioactive is the food?'" says Ferrier. "But it's a nonsensical question. Under the laws of physics, it's impossible for the food to become radioactive."

The safety and wholesomeness of irradiated food has been studied extensively, since as far back as 1925. On the basis of current scientific knowledge, the following bodies, among others, have endorsed the safety of properly irradiated food: the United Nations' World Health Organization, the United Nations' Food and Agriculture Organization, the Science Council of Canada, Health and Welfare Canada, the United States Food and Drug Administration, and the American Medical Association.

Food irradiation, in fact, is a very straightforward process. Food is exposed to ionizing radiation from gamma rays emitted by radioactive isotopes (such as Cobalt-60 or Cesium-137), fast-moving electron beams produced by accelerators, or X-rays.

By breaking down some of an organism's chemical bonds, the ionizing energy kills the moulds, bacteria, and parasites that cause spoilage and food poisoning. In smaller doses, the ionizing radiation can also slow down the ripening of fruits and inhibit potato and onion sprouting. And it can be used to sterilize or kill insects, as well as their larvae or eggs, that damage crops and infest food supplies.

Ensuring that food receives a correct amount of radiation is critical — but not because of any danger of radioactivity. Too little ionizing radiation will not produce the desired effect, and too much may create unwanted changes in flavor and texture. The radiation dose a product receives depends on the exposure time and the intensity of the radiation source. Maximum dosages for different applications are set by government regulation and measured by dosimeters placed with the food being irradiated.

Research has shown that refrigerated, fresh poultry that has been irradiated will stay fresh for as long as two weeks — compared to three days for non-irradiated poultry. As well, irradiated strawberries can be kept refrigerated an additional 10 days longer than the non-irradiated variety.

Irradiation is not suitable for all foods, however, and cannot be used to reverse the spoilage process or make an inferior product better. While food irradiation produces some nutritional loss, the loss is no greater than — and often less than — other processes such as canning or freezing.

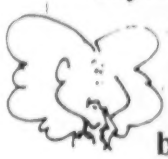
**World Leader**

Nordion International Inc., formerly a division of AECL, is among the world leaders in food irradiation techniques. The Nordion system uses Cobalt-60, a radioactive isotope produced in CANDU reactors for commercial and medical use, such as cancer therapy.

Canada, in fact, is the world's largest supplier of industrial irradiators and Cobalt-60. Of the world's 160 industrial irradiators (including some 25 used for food irradiation), more than half have been supplied by Nordion. Most of Nordion's multipurpose machines are used to sterilize disposable medical supplies and personal care products. However, some are also used for food irradiation, and a few exclusively for that purpose.

Under the Nordion system, food is safely irradiated in a shielded chamber, with six-foot-thick concrete walls, contained within a bungalow-size building.

A full-scale food irradiation pilot plant, funded by Nordion and the Quebec government, operates at the Canadian Irradiation Centre at Institut Armand Frappier in Laval, Quebec. The centre, officially opened in May 1987, provides facilities for research, training, operational demonstrations, and product and market trials. In addition, a food irradiation research facility has been established at the Agriculture Canada research station at Ste.-Hyacinthe, Quebec.



**"Maybe food irradiation has some benefits. If it can save hungry people it can't be all bad, can it?"**

Graphic: The Africa File, VIDEA

Extensive research into food irradiation has also been undertaken by food and agriculture scientists with AECL's Radiation Applications Research Branch at the company's Whiteshell Laboratories in Manitoba. Scientists at AECL's Chalk River Laboratories in Chalk River, Ontario, are also developing industrial electron accelerators that could be used to irradiate food.

**Numerous Benefits**

Although food irradiation is not a panacea for all food problems, it does offer several clear benefits, says Joseph Borsa, a senior researcher at AECL's Whiteshell Laboratories.

These benefits fall into three main categories:

- Food irradiation could reduce the incidence of food-borne disease. It has been estimated, for example, that Canadians suffer from more than two million cases of food poisoning each year, with an estimated drain on the Canadian economy of more than $1 billion annually in health care costs.
- Food irradiation could reduce food spoilage and thereby help alleviate food shortages. The World Health Organization estimates that about one-quarter of the world's agricultural production is lost after harvesting. Faced with losses of this magnitude, particularly in Third World tropical regions, food irradiation could help reduce food spoilage.
- Irradiation could help fill the need for an effective quarantine treatment for agricultural commodities in international trade. This need is becoming increasingly important as existing chemical agents either lose effectiveness (because of the emergence of resistant populations of pests) or are withdrawn by regulatory agencies because of concerns about the toxicity of chemical residues. Irradiation has several advantages over chemical fumigants and preservatives. It leaves no residue, can be applied after the food has been packaged, and penetrates into food to kill pests that bore into its interior.

According to AECL's Borsa, concerns about possible health hazards associated with the consumption of irradiated food have been thoroughly examined. "There's a strong consensus among food scientists, as well as national and international agencies that irradiated food is safe," he says.

"When you consider its potential for reducing the incidence of food-borne disease and world hunger," Borsa continues, "it's clear that food irradiation is a technology whose time has come."

This article is reprinted with permission from Ascent Volume 9 Number 3, Fall/Winter 1990/91. Ascent magazine is published by AECL (Atomic Energy of Canada Limited).

# A bad idea whose time has come

Irradiated food hits the grocery shelves

SCRUTINIZE LABELS AT YOUR FAVORITE SUPERMARKET, because the first commercial food irradiation plant in the United States is now at work. Vindicator of Florida, Inc., exposes strawberries to gamma radiation in order to prolong shelf life, destroy insects, zap away filth, and extend ripening time. So far, the Food and Drug Administration has approved poultry, pork, fresh fruits and vegetables, spices, nuts, teas, and wheat flour for the irradiation process

These events have not escaped the attention of food safety activists. According to Karl Grossman, writing for the **Alternet** news service (Sept. 12, 1991), physician Walter Burnstein, chairman of the consumer group Food and Water, says that food irradiation will kill people along with bugs and bacteria. Burnstein believes that while food irradiation does not create radioactive food, the process leaves behind cancer-causing free radicals, as well as harmful molds. Supporters and opponents agree that irradiation also removes some of the vitamin content in foods. And the environmental dangers of transporting and using the gamma ray source, cobalt 60 (a by-product of the nuclear energy industry), are well documented.

Irradiation proponents are confident that the American public will readily accept irradiated food once they realise its benefits. Sam Whitney, president of Vindicator, raises the specters of salmonella and trichinosis.

It may come as a shock to health food shoppers that irradiation proponents are particularly interested in zapping organic foods. In a report in **Eating Well** (Jan./Feb. 1992) Whitney claims the attitude of the FDA is that "the food they sell in health stores is the most dangerous food in America. This health food stuff has cow shit and chicken shit on it and bugs."

Consumers will have to examine food carefully to determine whether it has been irradiated. The FDA currently requires that written notices appear on irradiated food, but a deceptively sweet-looking flower symbol, the "radura," may replace the written label. There are no laws that say processed foods containing irradiated ingredients must be labeled, nor are labeling laws always enforced. Kiki Carter, working to stop Vindicator, observed in *Eating Well* that "We have a law that says if you wax fruits or vegetables, you have to label them. But you can go into any of our grocery stores and see waxed cucumbers that aren't labeled." And while the shine of waxed food makes that process obvious, irradiated food gives no such clue to its glowing past.

**"Irradiating Organic Food doesn't sound good."**

Graphic: The Africa File, VIDEA

Anti-irradiation activists have not given up, however. Elayne Clift reports in **On the Issues** (Fall 1991) that Maine, New York, and New Jersey have banned the sale of irradiated food, and at least seven other states are considering similar bans. In addition, more than a thousand corporations have pledged not to use or sell irradiated products. A nationwide boycott on Florida produce is also in the works.

(For more information about food irradiation, contact Food and Water, Inc., 255 Lafayette St., Room 613, New York, NY 10012; 800/EAT-SAFE.)

Mary Morse

Reprinted from the Utne Reader, May/June 1992

# THE MARKET ECONOMY AND RURAL WOMEN

World agriculture is in a state of crisis; a crisis of rising input costs, declining commodity prices, declining food quality, soil degradation, and the depopulation of rural areas. The cause of this situation can be linked to the rise in cash cropping encouraged by an economy which values food, not for its nutritional worth, but for its earning potential.

The increase in stress, brought about by the depressing state of agriculture, has had a pronounced impact on individuals and communities. Rural women are greatly affected by this strain because of their assumed role as natural childbearers and domestics in the market economy. This is the same role that denies women access to land, credit, training and technology and leaves them without childcare services in rural areas.

More fundamentally, however, it is because of the market economy and its emphasis on monetary reward that women around the world receive no recognition for the work they do in agriculture. In Africa, women produce two-thirds of the food and do three-quarters of all agricultural work. In Asia, women constitute one-half of the agricultural labour force. However, in both cases, women receive very little credit for the amount of work they contribute.

It is not only in developing countries that rural women are marginalized. In developed countries like Canada many women are farmers or play an important role in the survival of the farm. Farm women do the books and gardening and help with chores, harvest, animal care, errands and finances. The farm could not work without them and yet they are not recognized as farmers. There is also a forgotten minority of women who are full-fledged farmers in a male dominated field.

Because their work gets little recognition, women often find themselves facing double or triple work days. In addition to agriculture duties, many more responsibilities are added on. A Honduran woman's double day entails work in the fields, domestic chores, and care for all members of the household. She grinds corn, prepares meals, takes care of the children, washes the clothes, irons, mends, and cleans the house. She walks miles looking for wood or getting water, and can still be found working shoulder-to-shoulder with her husband in the fields.

A triple day occurs when rural women are forced to work off the farm. Currently in Saskatchewan, over one-half of farm families have one spouse working off the farm to supplement the farm income. In most cases it is the woman who must find other work and it is usually in addition to her domestic chores on the farm. She takes on a triple day of work — on-farm, off-farm, and household.

**Women around the world:**

- Work two-thirds of all the hours of labour in the world — on average 10 to 16 hours per day
- make up 50 to 90 per cent of the agricultural labour force in developing countries
- earn one-tenth of the world's income
- own 1% of the world's property

Worldwide, women's work in agriculture goes unnoticed for a number of reasons, but mostly because it is unpaid. Unpaid means unrecognized and unrewarded in the market economy. Women's work is often invisible out-side of the home and does not bring in cash. Because it has no exchange value, women's labour has no value at all.

But more importantly, women's labour is free because it is in the best interest of the market economy for it to be free. The market economy purposely ignores the contribution of women because it relies on them to provide their labour without compensation. The market economy demands access to a cheap, healthy, and unlimited labour force and therefore needs women to raise children and provide daycare for free. In the drive for a healthy labour force, women are expected to provide emotional support and make the home comfortable and tension-free. In this capacity, they are doomed to become the first victims of stress in the crisis situation.

The status of rural women is unlikely to improve unless there are dramatic changes in attitudes toward women and agricultural production. It is imperative to recognise women's role as food producers. They must have access to land, credit, training, and technology. Child-care must not been regarded as solely a woman's responsibility and childcare services in rural areas must be provided. But overall there must be an effort to address the problems which are specific to women in this time of crisis.

Reprinted from Reeping or Feeding, Oxfam Farmers Brigade © 1992

# Women's know-how:

## the untapped source

*Sidelining women can sink an irrigation project and exclude many of those who water the land from sharing the benefits.*

When extension workers in a community in Guinea Bissau invited women to attend discussions on a village irrigation project, it looked like a positive example of involving women in decision-making. But the meeting was scheduled for mid-morning — exactly when all women are out working in the very ricefields under discussion.

Such practical mistakes are easily avoided by asking women when and how they can participate. It is surprising how often this is not done. There is no blueprint for gender-aware planning of irrigation, but the overall absence of attempts at such planning has often excluded women from sharing in the benefits of irrigation. In addition, projects themselves miss out on the valuable and often essential contributions of women, causing project failure.

**...but when the irrigation improved land was reallocated, 87% was registed in the men's names.**

In Madura, Indonesia, women's main source of income is farming, in which they invest much labour. The recent introduction of tubewell irrigation drastically changed cropping patterns. Some previously rainfed land is now irrigated, producing up to three rice crops a year.

But the new rice varieties depend on greater use of fertiliser and pesticides, and the families cannot cope with the additional cash flow. More importantly, extension service messages about new farming inputs and practices have been aimed at the men, as formal heads of household. So women are denied access to the information they need to benefit from the changed conditions by raising production.

It all goes wrong because irrigation planners — many of whom are male engineers and economists — see water as the main constraint on production, whether there is too much, too little or simply an irregular supply. They may thoroughly research the water technicalities of a project but make a series of incorrect assumptions about social relations.

Households, for example, are often seen as homogeneous families, with benefits spread evenly to all, regardless of whether women or men are the producers of food. Many irrigation engineers focus on direct production within an irrigation system, forgetting the many household tasks that have to be done to make it work; frequently they assume that only men are farmers. In planning the Jahally-Pacharr project in The Gambia, planners assumed that men decided how the family labour should be used, when in reality women allocated much of their own labour to their own tasks, and also owned plots of land.

The planners also assumed that household production was based on mutual interests, whereas women and men had different — sometimes conflicting — concerns. Consulting only with men could not provide the full picture.

Mistaken assumptions are also made about who does what, and the impact on non-agricultural work is sometimes not taken into account at all. As in Madura, irrigation interventions often result in the planting of different crops, causing changes in labour requirements. Since Madurese women are solely responsible for many other household needs, the implications of changes in farm labour demands must be understood to avoid burdening women with impossible workloads.

Assumptions are made about who controls and uses the resources needed for irrigation. The land, for instance, may have well-established use rights. In the Gambian scheme, women were recognised by the project planners as the main rice producers in the swamps, but when the irrigation-improved land was reallocated, 87% was registered in the men's names. Even after some adjustment of land titles, only 10% of the most productive lands were registered with women. As women's land rights change and they face increasing demands on their time, the gap between their opportunities and their

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responsibilities widens.

A third set of assumptions concerns who benefits from different activities. Madurese women control much of the agricultural output, which they have a stake in protecting and enhancing. But if their incentives for improving production are not recognised and they are therefore excluded from information provided by extension services, their essential contribution to the household can be jeopardised.

The Jahally-Pacharr scheme was designed for double-cropping of rice to increase production. But the women were concerned more with risk avoidance and flexible timing of tasks than with higher yields for maximum income. With two rice crops, risks increased because there was no time for other non-rice crops; if a rice crop failed, failure would be total.

Planners must be able to recognise such assumptions and to challenge them. They must become better equipped to consider the wider social and physical realities within which an irrigation project functions, and the best place to learn is from the local people who understand the realties.

Participatory appraisal methods have been developed to facilitate consultation, but to get a gender perspective, such methods must involve both women and men. In the Jahally-Pacharr project, responsibility for land distribution among villages was devolved to the villages, but women were not involved in the land allocation decisions in each village. The result: men own the most productive land.

Another wrong assumption is that all women have the same needs. For full understanding, different women — the richer and poorer, young and old — must be listened to. Consultation with women can avoid undermining their position. And participator planning that takes gender differences into account will also improve the performance of irrigation projects.

*Irene Guilt is a research associate in the Sustainable Agriculture Programme of the International Institute for Environment and Development in London.*

Reprinted from Panoscope Magazine, July 1992

# GAINING GROUND

Zipporah Mutanga Musembi lives in the Machakos district of Kenya where she worked with her husband on their 4.4 hectare farm for 6 years. When he secretly decided to sell the farm and move away, she was left with nothing. The new "owners" of the land came and demolished her home, forcing the older children to leave the only house they knew. Musembi had to move in with her older married sister.

Musembi's example, according to IDRC project researcher Elizabeth Nzioki, is not exceptional. It is the story of many rural women around the world who are constrained in their ability to own and control land.

Nzioki began the project, called "Access to Land Ownership in Kenya," in 1987. Nzioki conducted research in the Mumbuni area of the Machakos district of Kenya, where she interviewed rural women in the context of land tenure reform.

The project has focused specifically on how land tenure reform has affected women's relationship to land and its implication for agricultural work done by women.

Land tenure reform legislation was introduced in Kenya in 1954 and it was designed to transform customary land tenure to statutory free hold through land adjudication, consolidation, and registration. A key development in Kenyan land tenure reform was the issuing of title deeds in the name of the "head of the family."

"The problem with the legislation," Nzioki notes, "is that the titled land is being transferred almost exclusively to male individuals." There is no provision for how women's access rights are to be defined or for how the land is to be

divided after a married couple has separated, she says.

This has led to an "individualization of land" in which male individuals, through the title deed, now have full power and legal rights over family land. Nzioki says there are a number of implications for women.

The first is that because most land is inherited by the male head of the family and not bought, women rely on men for land. "In this country, women do not inherit land but are almost completely dependent on their husbands, brothers, or in-laws to give them land and to let them farm," Nzioki says.

A case in point is Theresa Wayua, a single mother of six. She was pregnant when she dropped out of secondary school and was sent away for having shamed her family.

"After the death of my parents" she recalls, "one of my brothers gave me a patch of land where I could build a small house. I work on coffee farms as a casual labourer for only 200 Kenyan shillings (US$10) a month." The brother is now urging her to move as he wants to use her land for another purpose. Wayua, like many other rural Kenyan women, is dependent on a male relation for access to land.

Many women, like Wayua, work on large farms, making little income. Nzioki concludes that, however good the land legislation is, these disenfranchised women will rarely benefit. The few women who have benefited are the economically better off — those with urban connections. Generally, rich farmers have gained at the expense of poor farmers, those with access to education and political power have gained at the expense of those who do not, and men have gained at the expense of women."

Instead of their traditional role as agricultural farmers and producers, women have been transformed into simple labourers on cash-crop farms. "The title deed is a legal instrument which has empowered men to have control over not just land but another resource — women's labour," says Nzioki.

Most land that women do own is often of poor quality, further hindering women's productive capacity. "Lack of decision-making power on land use is pushing women to marginalized land and decreasing their traditionally high agricultural productivity," Nzioki says.

After her husband left her with a mentally retarded and a physically disabled child, Ngii Musyoki was forced to move to another area 4 kilometres away. Without income to buy or lease land she found a free, swampy piece of land and claimed it as her "shamba" (farm).

Although Musyoki has farmed this land for more than 20 years, she does not legally own it. She is what the municipality calls a "tenant at sufferance" and can be evicted from her farm at short notice. She is also not permitted to plant cash crops like coffee or bananas — imposing a serious constraint on her income.

**"It sounds like the colonial government has a lot to answer for!"**

The fact that Musyoki has little control of her own land is a reflection of the government's lack of understanding of the agricultural contributions of women, Nzioki says. "This does not augur well for the government's policy on nutrition and food security where the strategy is to increase and diversify food production at the household level so that rural families are properly fed," she says.

Musyoki has been sending emissaries to the district commissioner in Machakos for an appointment to discuss her "shamba." So far, the only government official she has been able to talk to has assured her that she can work her farm until 1993 without fear of eviction.

The fact that Musyoki cannot discuss her land claims with government officials does not surprise Tom Kyule, a member of Nzioki's research team. He says that among the 150 women interviewed, none had received training for new farming techniques nor had they talked to extension officers. "One of the women told me that the extension worker wanted to talk with her husband, despite the fact that he lives in Nairobi and comes home only once every 2 months."

Kyule explains that this is often because the extension workers have the names of the owners of land parcels, usually the males in the family. The owner of the land title, however, is not always the one that actually farms the land, Kyule says.

Despite the obstacles facing women, Nzioki remains positive that her research work has done much to create awareness among women. Interviews with rural women farmers leads Nzioki to speculate that Kenya may see resistance to certain land sales in the future.

She says that the research is policy oriented, with the results communicated to the law reform commission in a bid to raise the status of rural women. "These women contribute a lot to the economy of this country," Nzioki says with anger, "but they are rarely acknowledged." Her project's key thrust is to reveal the systematic discrimination against women by government and society. Nzioki fervently hopes that this awareness will lead to greater confidence among Kenyan women and fairer land legislation.

Rebecca Katumba, a freelance writer based in Kenya

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# LAND TENURE

The market economy and resulting commodification of food have caused dramatic changes in traditional land tenure systems around the world. There is no shortage of arable land in the world just as there is no shortage of food. However, just like hunger, increasing landlessness is becoming a serious problem in the global food system. The root of this problem is that there is too much land in the hands of too few people and these people are concentrating production on nonessential agricultural products. This situation is a product of the way land tenure is presently organized.

Earlier civilizations held land communally and human contact with land was structured by religious beliefs that viewed the earth as a sacred entity. In pre-colonial Africa land tenure was tribal and plots were shared among tribe members according to need. The South American Incas had access to land which was held by the community or kinship group.

European colonialism radically changed traditional relations to land. In Africa, India, and Latin America communal tribal land ownership was gradually replaced by the colonial model of ownership. Customary use rights were discouraged in favour of legal measure that put land in the hands of individual owners.

**In Latin America 7% of the landowners control 93% of the arable land.**

In Latin America there has been a pattern of unequal land ownership with a few powerful families owning huge farms and a majority of people either without land or working very small plots. This pattern has been accentuated in the twentieth century as multinational corporations gained control of huge tracts of prime agricultural land.

These large landowners concentrated on the production of a few agricultural products for export such as coffee, bananas, sugar cane, cotton and beef at the expense of production of basic food to meet local needs. In the last few decades, however, multinational corporations have divested themselves of much of their landholdings in Latin America, preferring to control production indirectly through contracts to huge landowners and other forms of marketing arrangements.

In the 1980s Latin American countries have been forced to concentrate even more on agricultural exports to pay the interest on their foreign debt. In the process increasing numbers of small farmers and farm workers have been forced off the land, often moving to the rapidly growing urban slums.

In Asia, land ownership was never as inequitable as it was in Latin America. However, the Green Revolution in the 1960s which brought high-yielding varieties of rice and wheat seed, fertilizers, pesticides, irrigation, and machinery tended to benefit only those who had enough land or capital to take advantage of these changes. Those with smaller plots of land, unable to compete with their richer neighbours, fell into debt and were eventually forced out of production. The product grown by these few remaining rich farmers has increasingly been dictated by the market. In the process, social and economic disparities in rural areas have worsened.

In Canada in the twentieth century there has been a decrease in the number of farms and an increase in the size of farm units. Most alarming is the fact that the proportion of young people farming has decreased. Land prices prohibit entry of younger farmers to replace those retiring. These prices are distorted by the speculation that occurs in the market for land and they rarely reflect the earning potential of the land. ...

**Women and Land Tenure**

[The whole issue of women's land tenure is one which effects food production in many countries.]

In the 1940's and 1950's, colonial administrators began land consolidation and resettlement schemes which reflected colonial notions of male property ownership. Men were encouraged to take a greater role in agricultural production. They were awarded parcels of land, often ignoring women's customary inheritance rights.

Even today, women regularly lose their land rights under the laws of marriage and inheritance. Under Islamic law, for example, daughters inherit only half of what a son inherits. In, Asia almost all women are landless because of inheritance and divorce laws which prevent women from gaining access to a man's land. In Canada, it is still rare for a woman to receive a farm operation as an inheritance from her father or her spouse. The patrilineal tradition still prevails: land is handed down from father to son.

Land reforms have taken place in many developing countries in recent years, but for the most part they have proven to be incomplete and ineffective. To be successful, land reform must be radical and far-reaching. It cannot be just the simple redistribution of land, but must be a fully coordinated system of agrarian reform. This includes helping farmers to market their produce, giving technological assistance and making credit available to small producers. This assistance must go especially to women, who, as we have seen, grow most of the food in the Third World.

Reprinted from Reeping and Feeding.
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# Credit schemes emphasize community of women

All over Bangladesh, small savings schemes have sprung up to support individuals and groups to set up small businesses, build homes or provide needed loans. Some have been fostered by non-governmental organisations, others by individuals and small groups. What is remarkable is the constantly shifting nature of the credit systems and their ability to adapt to the needs of the rural poor. In recent years a grassroots banking system has developed quickly and creatively to meet a growing demand for credit. They are becoming one of the most effective ways for poor people to climb out of poverty, and women seem to be in the forefront of the movement.

Among the best known are the Grameen banks, though as some of these banks have abandoned their original target group of the landless poor and become the domain of the middle class, many groups do not go to them, feeling their interest rates are too high.

The basic models are rural co-operatives known as village banks which are owned, technically more than practically, by their members in small groups of five. Staff members tour the villages to assist the savings groups with their accounts.

Recently even smaller units are emerging. The landless, especially women, who are often too poor to take advantage even of these rural banks, form new, yet more informal, groups whose members meet regularly.

They each save from one taka to seven taka per week. Registers are kept and rules drawn up; group decisions are made as to who is to receive a loan from these savings and on what terms. Sometimes the money is kept in the president's or the secretary's house. When a bank is handy, a bank account is often opened in the name of the group, or the money may be passed to the sponsoring NGO* for safe-keeping.

Addressing the needs of the hardcore poor, one NGO which forms groups of 25 members recommends that each woman take one handful of rice every time she prepares a meal and set it aside. At the end of the week they sell the collected pile of rice and place the money raised in the group's savings fund.

Of course there are snags and drawbacks to the movement. In some cases, spontaneous village savings are controlled by one entrepreneurial individual who alone makes a profit out of the process.

Sometimes shrewd village money-lenders, finding themselves threatened by this self-help movement, have themselves formed such savings groups, drawing on the savings of smaller groups. In fact, they might receive what amounts to an interest-free loan from the poorer savers while the money-lender lends it out at high rates of interest.

But, in general, the movement is working well, and the women are finding themselves increasingly free of the exorbitant charges of the traditional money lenders. "We used to take loans from the money-lenders or from the landlords — this was humiliating and usually they charged high interest," one woman said. "Now we can get it from the group if we need it."

For the first time, access to funds from the savings group may be supplemented by loans at low rates of interest from the sponsoring NGO. In some cases, the groups with bank accounts also gain access to the wider credit facilities of the rural banks, so long as the group possesses enough literate persons to keep the account straight. They are quite clear about the profits: one woman estimated that she was benefitting to the tune of 30 takas every three months on a loan of 100 takas simply by not going to the local money-lender.

And the sums raised in this manner are often substantial enough to purchase materials to start cottage industries. One group bought two sewing machines which the members use; if they make any profit from their work, they pay one third to the group.

Last year, a group bought 10-day-old chicks from the government poultry centre for 35 paisa each; after six months, they were plump, laying birds worth 100 to 150 takas each, providing the group members with eggs and chicks. The woman who looks after the small poultry farm with her family pays 50 percent of the profit to the group.

Other income-generating activities have been started — cane furniture making, tailoring, mat weaving, embroidery, candle making, etc. Some have become more ambitious. In one village, a group of women has begun silver-smithing. Near the coast, the villagers make and sell, mend and use fishing nets, even buying into some of the small fishing fleets which line the shores.

In another village, some of the women have leased from the government some unused land and an irrigation tubewell and are now themselves leasing it out to various families to farm. Half the rent is paid before harvest, the rest after the harvest; the profits are used by the group for other income-generating programmes. In other areas of Bangladesh where the land is not intensively farmed, the women lease and sometimes buy small plots of land. And in at least one case, some women have opened a roadside "hotel" business, unheard of before, for such work is traditionally a man's preserve.

There are problems, and even social fallout from the new credit systems. Some of the men, especially the husbands, do not like them, NGO sponsors are seen as threatening outsiders, disrupting the old ways. And there is evidence that in a number of cases, as soon as the women begin to earn money of their own, their husbands stop giving them food money for their family, so that women's earnings in these cases only help the men. The problems can frequently escalate to violence against the women. So empowerment against the husbands and the money-lenders is now occupying the attention of some groups.

Alan Rogers, director of Education for Development, an NGO based in the United Kingdom, recently spent five weeks in the villages of Bangladesh making a video film for the United Nations International Literacy Year 1990.

Reprinted from Development Forum, March-April 1991

*. NGOs: Non-Governmental Organization, often an aid organization

# If we declared war on hunger...

**Compared to what the world spends on the military, the cost of reducing hunger is a bargain.**

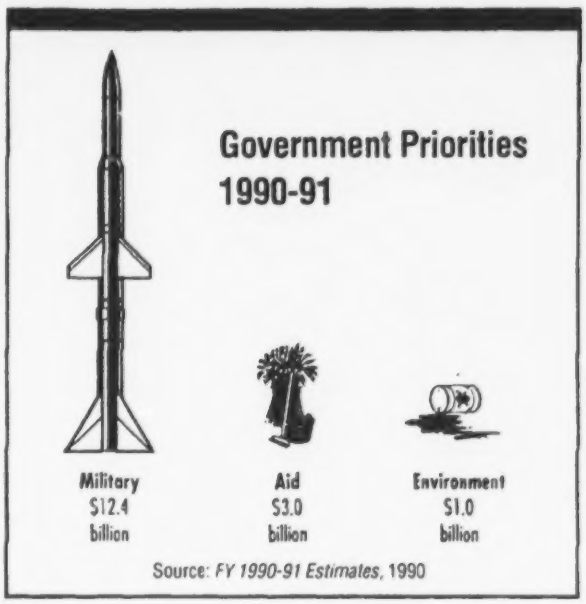
End world hunger. It's a simple statement yet it describes a task never before accomplished. Is it even possible? The obvious hurdle is already cleared; there is enough food. But the next step seems daunting — a global mobilization of resources and political will directed at reducing poverty, hunger and malnutrition. Billions would have to be spent; economies would have to be restructured; sacrifices would have to be made. Surely an effort of this scale cannot be achieved!

It happens all the time. They call it war.

Even when they don't call it war the result is the same. In the 1980s, two governments in three spent more on "defense" against military attack (or the perceived threat of attack) than they did to defend their citizens against the everyday hazards of disease, accidents, and ill health; one in three spent more on military power than on education and health care combined.

This trend is particularly devastating in developing countries. Millions of people died of starvation in the 1980s because of famines that were caused in part by armed conflict. The record number of war-related deaths was fulfilled by a heavy flow of arms from industrialized nations. In 1984, a time when images of starving Africans dominated news reports, arms export sales reached an all-time high of $57 billion U.S.

Today, 15 children in the world die every minute for want of essential food and inexpensive vaccines, and every minute the world's military machine takes another $1,900,000 from the public treasury. In the last three decades, expenditures on an unprecedented global arms race have consumed over $17 trillion. ($17,000,000,000,000) of the world's resources, valued in 1986 U.S. dollars.




Graphic: Canadian Peace Report

What would happen if all - or even some — of the world's resources now spent on the military were aimed at attacking poverty? On September 30, 1990, 71 world leaders (the largest meeting of heads of state in history) gathered for the World Summit for Children. In an historic declaration, they promised to try to end child deaths and child malnutrition on today's scale by the year 2000. The cost of reaching this goal (broken down into 22 specific targets) is roughly estimated at $20 billion a year for the next decade. Put in perspective, $20 billion amounts to one eighth of one per cent of the world's annual income. It is no more than the world spends on the military every ten days.

It is overly simplistic to suggest that by itself, conversion of military spending will bring an end to world hunger. But if we declared war on hunger — that is, if we mobilized the resources and political will to provide adequate nutrition, health care, education, and social services for all people ... if we addressed the broader economic and political inequities that underlie poverty — then the world would have a fighting chance. It can be done, and victory would be the greatest ever won.

*Sources: World Military and Social Expenditures 1989; State of the World's Children 1991; State of the World 1990.*

Reprinted from World Food Update 1991

# *Sustainable Agriculture:*

## *The ecological alternative*

Our great hope for a food supply that is safer for both ourselves and our planet is the alternative type of farming called "sustainable agriculture".

It includes the farming systems referred to as organic or biological agriculture, bio-dynamic agriculture, the French intensive method, and ecological agriculture.

All share the common goals of stressing the quality of food and of growing it in sympathy with natural processes. We'll use organic farming as an example. There are six basic standards drawn up by the International Federation of Organic Agriculture Movements. Briefly, they outline that:

- an organic farm draws upon local resources instead of using outside material;
- the organic farmer maintains and improves the fertility of the soil instead of depleting it;
- the organic farmer avoids any form of pollution when raising and harvesting crops;
- a high nutritional quality in food be emphasized, as well as quantity of food;
- the use of fossil fuels like oil be kept to a minimum; and
- the organic farmer offers satisfying and financially rewarding employment for farm-workers.

You will find, then, no synthetic fertilizers or pesticides, no growth hormones or livestock feed additives, on an organic farm. Instead there is self-sustaining soil that has a high humus content and suffers minimal erosion, producing plants less susceptible to attacks from diseases and pests.

Plant residues and compost also help to build a more fertile soil full of earthworms and bacteria; the aim of an organic farmer is soil that gets a little richer every year.

Crop variety and rotation are important aspects of an organic farm. As the following example illustrates, this diversity of crops greatly improves a farm's chance of survival.

Conventional farms in the prairies often specialize in wheat. In the first place, such monocropping practices require large amounts of fertilizer to maintain adequate soil nutrient levels and regular application of herbicides and insecticides to control the pests that thrive in such monocultures.

Secondly, the risk of crop loss in a monocrop situation is quite high. It is not unusual, for example, for mid-August rains to destroy an entire wheat crop. Farmers in this situation will have heavy out-of-pocket expenses and no other income source to fall back on.

Under similar circumstances, a sustainable farm might fare much better. A sustainable farm might have five crops instead of two (perhaps rye, oats, wheat, canola and buckwheat) and would in all likelihood also have livestock. The sustainable farm probably would already have harvested the earlier maturing rye and oats crops before the rains came. Also since buckwheat is not damaged by rain, the buckwheat crop would not have been affected. Furthermore, the storm wouldn't hurt the livestock. In addition, this farm would not have had the expense of fertilizers and pesticides. Consequently, under the same circumstances, the sustainable farm would fare much better.

Increasing numbers of farmers are looking at sustainable agricultural systems as a solution to their economic troubles.

Experienced organic farmers, however, caution that any changes to farming operations should be made gradually to avoid costly mistakes. It's not simply a matter of removing the chemicals line from the budget and there are certain cost trade offs (chemical costs for manure handling costs, for example).

Because of the short-term economic risks, the federal government will have to provide assistance to farmers during the transition from intensive chemical-based farmers during the transition from intensive chemical-based farming to sustainable approaches.

But Saskatchewan farmer Netty Wiebe says that changing the way we farm will happen at the local level, where local farming people are the experts.

*Information for this article was adapted from* **The Canadian Green Consumer Guide** *and a booklet from The Marquis Project on making the conversion to organic farming.*

Reprinted from World Food Update 1990

**"No Pesticides, Please!"**

# Making the transition to organic farming

The Bauml Family in Saskatchewan has been farming for decades. Two generations of Baumls are currently operating the farm — Ray, his brother Clarence and Clarence's sons Ron and Dave.

It's still not unusual to find a family operated farm in Saskatchewan, although they are becoming harder to come by. Saskatchewan family farms are disappearing at a rate of 1,000 per year. What sets the Baumls apart from many Saskatchewan farmers, however, is their transition to organic farming.

Over the past few years the Baumls have been slowly and methodically changing management techniques on their seven quarters of land. They've been cutting chemical inputs and are now at the point where the crop on one quarter of land can be certified organic this year, and within two years one half of their farm could be certified.

One of the tools the Baumls are using in their conversion is caution. "We're not going to just jump into this," explains Clarence. "I'm sure there's lots to learn."

The Baumls state environmental and economic concerns as two main motivating forces behind their decisions to change their farming practices. "I hate spraying. It's hard on us and it's hard on the people who buy the products," states Clarence. "And the price of the stuff!"

"In conventional agriculture, it's inputs that kill you," says Dave. "You have to keep putting higher and higher inputs in."

Clarence points out that their income for the past year was the smallest it ever has been. "But on the other hand our profits were as good as they ever have been because of the reduced amount of fertilizer and chemical use."

The Baumls have a lot of questions concerning the effectiveness and long term viability of farm chemicals. As Clarence points out, "They don't eliminate the weeds completely; it seems they're always back. We're getting new weeds and tougher weeds."

The Baumls are also concerned with some of the new chemicals coming out.

"There 's a new one out now that's for killing wild oats in wheat," Ray explains. "It says on the pail that you couldn't seed any broad leaf crop for two years after. It says you can't use the straw for bedding and you can't use the straw for animal feed. The grain is part of the plant too. If there's residue in the straw why would there not be residue in the grain?"

Crops rotated on the Bauml farm include wheat, oats, barley, rye, canola, peas, lentils, red clover and yellow clover. To combat weeds and build soil organic matter, the Baumls annually leave approximately 200 acres in clover. The second year's growth of clover is green manured. "The clover is very toxic to a lot of weeds", states Clarence.

For the past 20 years, the Baumls have also been planting shelter belts of trees to combat soil erosion. They currently have 6-7 miles on their farm, and extend this every few years.

The Baumls are optimistic about their new farming methods, and believe they have a place and future in Saskatchewan agriculture. They see the current crises in prairie agriculture being tied to many current farming practices, and they have taken the first important steps towards sustainable farming.

A longer version of this article first appeared in **Synergy**, Volume 2, No. 2.

Reprinted from Our Planet, Vol 4, No 2, 1992

# ECO-FARMING IN CHINA BRINGS GREEN PROFITS

The eco-villages of China are run by and for poor farmers, a toil of many hands with few resources except for a thousand years plus of agricultural insight and some modern techniques of management and analysis. The spread of eco-villages is lent new urgency by the need for developments which are sustainable and can feed people for generations to come.

Zhang Kuicheng stands in the fields of the 134-hectare Liuminying eco-farm at Zhangziying Village, some 40 kilometres outside Beijing. He points to a field where the farmers last year began to plant fruit trees in combination with vegetables.

Further down the road, workers are unloading a mixture of manure and straw waste from a horse-drawn cart next to a rice field. The manure comes from the eco-farm's own animals and has almost eliminated the need for chemical fertilisers.

In another field, plastic sheeting forms long, tunnel-like greenhouses for the growing of cucumbers. For several months of the year, heat for the greenhouses comes from piped-in biogas — a vital component on this farm of sustainable cycles.

Zhang was elected by the farmers to oversee its beginning as an eco-farm in 1982. It has 240 families, or 900 people, and grows mainly wheat and rice, some corn, about 30 hectares of vegetables and 3 hectares of fruit trees. It raises 80 000 chickens and 150 000 Peking ducks per year and currently has 4000 pigs and 80 cows. Fish are kept in ponds and every possible piece of wasteland is planted with trees.

Experts from the Beijing Environmental Protection Research Unit designed the eco-farm along lines recommended by China's National Environmental Protection Agency (NEPA). Liuminying has been used as a model in a burgeoning movement which has seen 1200 eco-farms spring up in China over the past 10 years.

One remarkable feature is that no extraordinary investment was needed to bring Liuminying up to its present level. It started with standard low-interest bank loans and

small investments by the farmers themselves, totalling 3 million yuan (about US$560 000).

Liuminying now shows a profit of one million yuan per year and the net income of each farmer is 30 percent higher than in the surrounding villages, which are composed of individual farmers.

'Before 1982 the village planted only rice and wheat. Most of the straw waste was used as fuel. The village wanted to raise productivity by using chemical fertilizers — about 250 tonnes per year. They were using too much,' said Zhang.

'In order to utilize the raw materials rationale, we started to apply ecological farming. We made an overall plan for the village and began to raise animals, vegetables and fruit. We re-use all the agricultural waste — rice, straw and manure — to generate biogas.'

The round, iron lids of biogas pits can be found laid into the pavement outside most of the village homes. Animal and human waste goes into the pits, where it decomposes to produce methane gas. A layer of water is kept on top of the fermenting mass, and the gas is siphoned into homes through a rubber tube.

The left-over solid waste from the biogas pit can again be re-used as fertilizer; liquid waste becomes fish feed along with ground-up corn waste.

Solar panels are also found in every courtyard of the village, generating renewable energy to heat water.

Is the eco-farm completely self-sustaining? 'Not completely,' says Zhang. 'For example, energy (from biogas and solar panels) is not enough. We have to buy coal because, in winter, the biogas pit does not work. Electricity and gasoline is need for machinery.'

As for chemical fertilizer, Zhang indicated its use had been reduced to 80 tonnes, for rice growing.

The United Nations Environment Programme — to demonstrate the great importance it attaches to the development of eco-farming — presented Liuminying with a Global 500 Award for environment achievement in 1987. Awards to other Chinese eco-villages followed: Shanyi of Zhejiang Province (1988), Heheng of Jiangsu Province (1990) and Xiao Zhang Zhuang of Anhui Province (1991).

The fast-growing Chinese programme of ecological agriculture approximates to movements towards 'organic agriculture' and 'integrated farming' which are growing up in other countries to challenge the system of farming based on fossil-based fertilizers.

Where China differs is in its comprehensive approach combining ancient and modern techniques and, importantly, in making it into a social movement, promoted officially through its environment protection agency.

Particularly characteristic of the Chinese system is the stereo, or multi-layered, approach which sets up cycles of sustainable, higher productivity, Li states.

For example, in some areas of Zhejiang Province, farmers grow gourds on racks over earthworm beds, with the luxuriant leaves influencing the microclimate under the racks, making it more favourable to earthworm growth. Earthworm excrement can be applied as manure to paddy fields, where the yield of rice would reach over 15 000 kilogrammes per hectare, without any other fertilizer.

Another example of the stereo approach features fields with rice in the upper layer, duckweed in the middle and fish in the lower layer, all growing in symbiosis. The duckweed on the water's surface absorbs the sunlight which passes through the rice, and serves as food for fish. The fish in the paddy fields also prey upon insect pests and excrete manure to fertilize the rice. Experiments in Fujian showed that this technique produced to percent more rice, 1125 kilogrammes of fish per hectare and a large quantity of duckweed as green manure for the paddy field.

The intercropping techniques, which play a key role in China's development of modern eco-farming, have been refined over many centuries: more than 1000 volumes elaborating Chinese traditional agriculture have been preserved.

In the third century, southern China developed various doublecropping systems, and a triple-cropping system comprising rice paddy, upland crop rotation and interplanting, was developed in the 12th century.

Reflecting on the recent upsurge of ecological agriculture, Li asks, 'Is it necessary for China in her agricultural development to go the same way as the Western developed countries have done, the so-called petro-agriculture with high input, high investment, high consumption and high output? The answer is definitely no! We have to take advantage of a big population to over-come the disadvantage of small resources, [and] make up the deficit in scientific [expertise] and capital levels with the rich experience of our traditional agriculture.'

Now, moves are afoot to transfer the techniques of Chinese eco-farming to Africa, where food shortages and environmental degradation are endemic.

UNEP and NEPA organized a training workshop on eco-farming for African participants in Nanjing, China, in October 1990. The next move will be to send two groups of experts to Africa in the second half of 1992 to conduct workshops on eco-farming in west and east Africa. A further aim is to establish eco-villages in two or three African countries, according to Professor Wu Zijin, a senior official of NEPA.

Reprinted from Our Planet, Vol 4, No 1, 1992

# Africa's Silent Revolution

By Pierre Pradervand

Graphic: Africa File, VIDEA

Possibly the greatest sign of hope for Africa is the silent, grassroots revolution taking place in villages across that vast continent, a revolution in which millions of peasant farmers are organizing themselves into village self-help groups. This contradicts the common media image of Africa as a region of insurmountable problems and crises, a hopeless cause.

African farmers certainly have been faced with growing challenges and difficulties. In some countries environmental deterioration has proceeded at a pace perhaps unsurpassed anywhere in the world. For each tree replanted on the continent, for example, 10 others are cut down.

The result has been a real and sometimes dramatic decline in living standards. The strains have been especially immense for women, who sometimes have to walk 30 kilometres for wood, 40 kilometres for water and 70 kilometres to sell vegetables.

**Peasants not passive**

African farmers did not passively wait for outside aid, however. In the late 1960s, but especially the early 1970s, key innovators (who were not always farmers but teachers, returned emigrants and the like) starting organizing villagers at the grassroots, primarily in the Sahel region, and later in some other parts of the continent.

At first they organized small self-help groups in their own villages, which undertook a variety of development projects: digging wells, building granaries, organizing communal fields. These groups numbered anywhere from 20-30 participants to more than 100. Not only did they often cut across gender lines, but they were on occasion multi-ethnic. In most known cases, women constitute the majority of these groups — up to 90 per cent in some areas of Gambia and Kenya.

By the mid-1970s local peasant farmer networks started to emerge and in the Sahel organized themselves into the first peasant farmer federations. Today these networks have in some cases turned into influential organizations, like the 100,000 — strong FONGS in Senegal, which unites the main peasant organizations of the country, or the Naam movement in Burkina Faso, which boasts close to 300,000 members. One must add, however, that such developments have been extremely uneven across Africa, and almost non-existent in some countries.

One of the most significant factors in this revolution has been the role played by women, not only in numbers, but especially in the level of their active participation. Everywhere, male peasant leaders stress that the women are better organized, are much more disciplined and hard working, save more than men do and are more dependable. There has been more than one example of a project, such as a village mill, which was failing when run by men, but which became successful when women were put in charge

**Governments as partners**

Not surprisingly, the countries where one finds the best-run peasant farmer organizations - Burkina Faso, Senegal and Zimbabwe - are also ones where the governments have acted in partnership with the farmers. In these countries, the state realized the advantages of letting the farmers organize: reduced need for government intervention in agriculture and increased motivation of farmers, a key factor in increasing production and productivity in the long-run.

In contrast, progress has been stunted in some other countries, usually with one-party states, where governments have been suspicious of anything resembling nation-wide peasant farmers organizations or have tried to forcibly "organize" farmers into state-run cooperatives, which often proved to be costly failures.

In the Sahel, where farmers are better organized than elsewhere, one organization that has played a key role is the "Six S," after the initials of its name

in French, Se Servir de la Saison Sèche en Savane et au Sahel (using the dry season in the savannah and the Sahel). It is an international non-governmental organization (NGO), run largely by farmers, with financial support coming mostly from Europe.

The "Six S," launched in 1977, has a unique system of "flexible funding": farmer organizations receive funds which are not tied to specific projects and which they can use as they wish (according to criteria defined by the farmers themselves). This has enabled the organizations to finance their own development, their own training courses and hire their own consultants when needed. The "Six S" today groups federations with a membership of half-a-million farmers in eight countries.

**Empowerment**

The key to this revolution can be expressed in one word: empowerment. Through self-organization, starting at the village level, farmers are, for the first time since the pre-colonial era, beginning to master their own destiny, although slowly, with as many defeats as successes. At the local level, they are able to democratically make decisions concerning their own development. In areas where women had no say whatsoever, and often could not even speak in public, this marks a major breakthrough. People are beginning to realize that "development" is a process as much as a goal, and a process which they can slowly master.

In recent years, NGOs from the North have played a major support role. While their support has been useful, there have also been may cases where their impact has been negative: not only because they compete with each other, but because too often they rush in with funds as soon as a group of farmers starts organizing — a good way of killing any budding spirit of self-help.

For this reason it is important that NGOs focus on institution-building, that is, helping villagers develop strong organizations at the grassroots, so that they can become independent of their partners from the North as soon as possible, especially in financing. There can be no authentic partnership where there exists a relationship of financial dependency. In the meantime, systems of flexible funding along the "Six S" lines, rather than project aid (which is often disguised paternalism or exterior control) should be implemented.

Above all, in countries where these peasant organizations are well-developed, it would be wise to include them in all national, regional and local planning efforts. There is much that can be learned from peasant farmers.

*Dr. Pierre Pradervand is the author of Listening to Africa: Developing Africa From the Grassroots (New York: Praeger, 1991), which recounts his observations based on visits to more than 100 villages in West, East and Southern Africa.*

Reprinted from Africa Recovery, December 1991

**Everywhere, male peasant leaders stress that the women are better organized, are much more disciplined and hard working, save more than men do and are more dependable.**

## Agriculture in Ladakh

Politically in the Indian state of Jammu and Kashmir, the Tibetan Buddhist enclave of Ladakh covers an area of 40,000 square kilometres on the westernmost edge of the Tibetan plateau. The region supports a population of just 120,000, most of whom live in isolated villages dotted among the mountains at elevations of over 3,500 metres.

In a Himalayan desert, where rainfall averages only 10 centimetres per annum and temperatures drop to as low as minus 40 degrees centigrade, Ladakhi households are almost entirely self-sufficient, dependent on trade for little more than luxuries and such items as salt and tea. Despite a growing season of less than four months, people manage to provide for themselves for the entire year.

**Cultivation**

Landholdings in Ladakh typically consist of one or two hectares, divided into a number of small, terraced fields located wherever there is sufficient water for irrigation. Open irrigation canals stretch for many miles, the water being shared by all the farmers of the village according to well-established schedules. In most villages an individual serves on a rotational basis as guardian of the watering process.

Barley is the staple crop, while wheat is also grown in all but the highest villages. Perennial hay crops grow around the edges of the fields. In some areas peas are common, and there are also a few root vegetables, principally turnips and potatoes. In the lower valleys apricots, apples and walnuts are grown. Willow and poplar trees, which are found throughout the region, serve as building materials and fodder.

Ploughing is done with a single-bladed plough, drawn by a pair of *dzo* (a cross between a cow and a yak). Fields are irrigated by periodic flooding, and weeded by hand. Peas are pulled by hand from dry soil, leaving the nitrogen-rich root nodules in the soil; barley and wheat are either pulled by hand from wet soil or — more commonly — cut with a sickle. The grain is threshed by a team of animals driven round a central pole, and winnowed by hand.

Over the centuries, crop strains have been selected for characteristics suited to the environment: fast growth, early ripening and high yields. Much of the barley has more grains per stalk than most European varieties, and is easier to thresh. Moreover, the crops are remarkably free of pests and disease.

Production of the major cereals probably averages around three tonnes per hectare, with individual fields reaching more than 10 tonnes per hectare. These figures compare extremely favourably with average yields for wheat and barley in India and Africa (1 t/ha), North America (2.2 t/ha) and the U.S.S.R. (1.5 t/ha).

**Animal Husbandry**

Almost every family keeps at least some animals, which not only serve as beasts of burden but also provide dairy products, meat and wool. Donkeys and mules are widely used for carrying loads and, at harvest time, for threshing. There are, in addition, large numbers of sheep and goats, as well as yaks, cows and the dzo.

Ladakhi cattle give very little milk, and fertility rates are low. However, they are well adapted to the extreme climate. The yak forages as high as 5,500 metres, and is able to withstand the rigours of the long and bitterly cold winters.

**An Integrated System**

A principal key to the success of Ladakhi agriculture has been the continuous cycling of nutrients. Naturally dissolved salts and fresh, unweathered minerals are contained in the glacial meltwater by which the fields are irrigated. In addition, the soil is amply fertilized by human nightsoil. Animal dung is not generally applied to the fields directly, but is saved instead as fuel for the kitchen stove. However in the long run it finds its way back to the land, as ashes from the stove are mixed with the nightsoil to provide potash and a little phosphate. Animal urine, which fertilizes the soil directly when the animals are grazing on the stubble, and indirectly when the scrapings from the stable floors are added to the compost, provides much-needed nitrogen. Nitrogen is also provided by the planting of peas, which have the ability to fix nitrogen directly from the atmosphere.

**"It sounds like farming is a lifestyle, not a business, in Ladahk"**

Agriculture in Ladakh is at the very heart of the social and economic frame-work: village life, major celebrations and religious ceremonies are intimately enmeshed with the agricultural cycle. As subsistence farmers, the Ladakhis are aware of the natural limits of their resources. Combined with polyandry (the practice of one woman having two or more husbands) and monastic celibacy, this awareness has helped to keep the population relatively stable, so the demands on the agricultural system have remained more or less the same from year to year.

Cooperation has always been an integral part of the agricultural system. Farm implements, labour and draught animals are routinely shared among groups of houses, as is the shepherding of animals in the high pastures. The division of water — the most precious resource — has only been possible through a very high level of social cohesion.

Conditions in Ladakh are extremely hard; the growing season is short, the winter severe. Nonetheless, the traditional system of agriculture has for centuries provided not only a bare subsistence but a considerable surplus available for trade. Through a combination of good husbandry and supportive social structures, the Ladakhis have managed to maintain a remarkably high standard of living.

This article is an edited extract from *Agriculture: Global Trends and Ladakh's Future, A Background Paper*, by Helena Norberg-Hodge, John Page and Peter Goering of the Ladakh Project, 21 Victoria Square, Clifton, Bristol BS8 4ES.

Reprinted from the Ecologist, March/April 1991

# Waiting for change: 8 ways to help build food security

## 1 JOIN A FOOD CO-OP

Many Canadian communities have food co-ops — non profit, co-operatively run alternatives to "supermarkets." Food is bought from wholesalers at less than market cost and these reductions are passed on to members. Every food co-op is unique. For some, members volunteer their labour for several hours per month. For others, there is a membership fee and requirement to give a returnable loan. You can find out more about food co-ops by contacting The Alliance of Co-operative Natural Food Distributers, c/o Horizon Distributers, 3450 Vanness Ave., Vancouver, British Columbia, V5R 5A9 (604-439-7977)

## 2 START A FOOD BUYING CLUB

If you live in a community that doesn't have a food co-op, you can get together with some friends and start a food buying club. A buying club is not incorporated, and is usually on a smaller scale than a co-op. Members get together to make large collective orders from wholesale companies and then take turns dividing and distributing orders to each other. You don't need a store. You can take turns using each others' homes to divide the goods. Just make sure you don't choose a four story walk-up! For more information, contact The Ontario Federation of Food Co-ops and Clubs, 22 Mowat Ave., Toronto, ON, M6K 3E8, (416-533-7989).

## 3 PLANT A COMMUNITY GARDEN

Open land in urban areas is hard to find, but if you know of an unused lot, you can seek permission from your Municipality to plant a community garden. Many cities and towns already have community gardens, and you may be able to obtain a garden plot within one of them. Members of community gardens benefit from the reduced costs of produce and the collective research and care needed for a productive garden. For more information on how to set up a community garden, contact Foodshare at 12 Shuter Street, Ste. 305, Toronto, ON, M5B 1A2, (416-392-6655)

## 4 MAKE INFORMED FOOD CHOICES

Find out where the food in the supermarkets comes from and buy locally produced foods when you can. Observe consumer boycotts of foods which are produced by companies using unfair labour practices. The United Farm Workers of America, for instance, have called for a boycott of California table grapes because of the health effects of pesticides on the farmworkers who work with the chemicals. You can find information on how to make informed consumer choices in Shopping for a Better World, a small book put out by the Council on Economic Priorities, 30 Irving Place, New York, N.Y., 10003.

## 5 SUPPORT ADVOCACY AND ACTION GROUPS

You can support the groups which fight domestic and world hunger by assisting them with their work or by holding fund-raising events in your community. Raising funds doesn't have to be boring. It can be fun and creative. Here are a few suggestions. Hold a "rich-person/poor person" dinner in which everyone purchases a dinner ticket for the same price but only 5% get a four course meal, while the majority get a bowl of rice. Hold a pot-luck and food auction where people donate a dessert to be auctioned off after the meal. Organize an annual neighbourhood garage sale and ask participants to donate a percentage of what they make.

## 6 LEARN MORE

Collect information about Canadian and international agricultural policies and how they affect producers and consumers. Research Canadian and international food issues. Read more about food issues and the structure of the food industry. Find out which multinationals own which products. Do the same multinationals control production, processing and the marketing of particular foods? Investigate government and non-government programs designed to assist poor people in Canada and in the Third World. Look at the cost of feeding and housing a family of four in Canada and compare this to welfare rates and minimum wage.

## 7 TEACH OTHERS

Once you've learned more, share the information. Show films and videos about food issues and hold discussion groups. Make a video! Write an article for your school paper. Make up an exhibit about food issues. Organize an educational activity for World Food Day, October 16. Write a play. Do some street theatre.

## 8 WORK FOR SOCIAL AND POLITICAL CHANGE

Ask your local, provincial/territorial and national political representatives about their positions on minimum wage, welfare rates, access to unemployment insurance and job-training programs, housing costs, daycare, health care and education. Voice your opinion and provide them with information which might help them work towards change.

Reprinted from World Food Update 1991

# ACTIVITIES AND IDEAS

This reading book is divided into subject headings dealing with food-related issues. The Table of Contents gives a brief overview of each article in the section. We have designed the activities to relate to these different sections.

These activities are organized in three ways. First are those entitled "To the Teacher", which are ideas for teacher-led lessons. Second are "Student Activities", those relating to specific articles and they are located under the title of the article in question. Finally, there are assignments developed for use at the end of a section, called "Additional Activities", where the student has the opportunity to "tie together" the information studied.

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## WHAT IS HUNGER?

### TO THE TEACHER

This section is an introduction to food issues. To help students expand on these concepts, ask them to hypothesize about the causes of hunger, guess at the statistics (use the Data Bank in the article, "The Hunger Remains") and formulate questions they would like to investigate. Write these on poster sized paper, and as the articles are read and activities completed, use the poster as a check on new understandings and beliefs about the issue of food.

The Jeopardy game in the article "A World in Jeopardy" could be used as a beginning or ending activity.

### STUDENT ACTIVITIES

Article 1. *Questioning Hunger* (p.1)

Design a poster that depicts the who, what, when, where, why and how of hunger.

Article 2. *A World in Jeopardy* (p.2)

Play this game as a class or in groups. Discuss the answers and questions.

Write your own answers and questions.

Article 3. *The Hunger Remains* (p.2)

Answer the questions at the end of the article.

Choose one suggestion that is made in the article of how to combat hunger (for example, removing trade barriers between third world countries and first world customers or cancelling third world debts), and brainstorm possible positive and negative repercussions for the developing countries and for Canada.

Oxfam-Canada

### ADDITIONAL ACTIVITIES

1. Use the readings in this booklet to design and create a board game focussing on food issues.

2. Test your family and friends on their knowledge of world hunger.

# FAMINE

## TO THE TEACHER

Many of the images we see and words we read on the issue of famine are emotionally unsettling. It is important that time is devoted to exploring the feelings that arise as students see the discrepancies between rich and poor. A journal or verbal sharing could be used to help students articulate their feelings.

Since articles on the media are included here, a TV or newspaper analysis would work well in this section. Have students analyze the content of news stories to see what areas of the world are covered by the media. Post a map and have students keep track of the number of times a country is mentioned in the news. The Case Study in this section provides a good "how to" of newspaper analysis.

Bring in other newspapers and magazines which explore current issues so students can begin diversifying their information sources.

## STUDENT ACTIVITIES

Article 1. *Famine: Real Causes, Real Solutions* (p. 6)

After reading this article, write a letter to Oxfam with your own question or questions. Mail it to the Oxfam office in your region. You may choose to send a copy to your MP or MLA.

Articles 2-5. Food: Africa (pp. 7-13)

Read this series of articles. In a group, research an African country. Look to newspapers and periodicals for the most current information. Report orally to the class.

Order a free map of Africa from CIDA and display it on a bulletin board. Collect news articles on Africa and display them with the map connecting them with string to the countries they discuss. (CIDA Youth Editions, PO Box 1310, Postal Station "B", Hull, PQ, J8X 3Y1)

Invite an African, an aid worker or someone who has travelled to Africa to speak to your class.

Adopt a country as a class. Raise awareness in the school about this country by means of a bulletin board, fundraising for this country, etc.

Article 6. *Infotainment* (p. 14)

Read this article then discuss what makes a country or an event newsworthy. Why are some stories covered and not others?

Invite a news reporter in to speak to your class on this issue.

Analyze one of the articles in this booklet or another article noting such items as who are quoted, how words such as "a few" and "some" are used, and other devices used it the article.

Write a paragraph or essay entitled "Can the news be unbiased?"

## ADDITIONAL ACTIVITIES

1. Arrange for a speaker from Oxfam or another world food organization to visit your class. Prepare questions for the visitor.

2. Plan to participate in Oxfam World Food Day activities.

3. Give up a favourite treat for a week and donate the money you would have spent to a local or international food organization. Find out about and participate in World Food Day (October 16).

## CASH CROPS

### TO THE TEACHER

Introduce the concept of "cash crops" and brainstorm with students why this concept developed. Tie in the colonialism of the 18th and 19th century to the situations today.

### STUDENT ACTIVITIES

Article 1. *Who is Juan Valdez?* (p.16)

Write an ad from the "real" Juan Valdez. Videotape or present your ad live to the class.

Article 2. *Cocoa Addicts* (p.18)

Go to a grocery store and write a list of chocolate bars that are available. List the manufacturer of each chocolate bar. What did you notice? How many manufacturers are there?

Article 5. *Working for Peanuts* (p.20)

In some way (comic book, flow chart) depict the development of trade in Senegal.

### ADDITIONAL ACTIVITIES

1. Write a story or diary that explores a "day in the life" of someone who works growing cash crops.

2. Write your own cartoon depicting the ideas in this section.

3. Describe the effects on a country of growing a single cash crop. Should you continue to buy these products or boycott them? What might be the results of your actions?

4. Research the practises of Bridgehead coffee. Are they different from other coffee companies?

5. Investigate your dependency on sugar. Look on the packages of 20 foods that you eat regularly and list, chart or graph the twenty foods. The ingredients on the package are listed in order from most to least present. Put a star beside the foods that have sugar as one of the first five ingredients. Analyze the results.

## SOIL, IRRIGATION AND WATER

### TO THE TEACHER

This issue may not be as meaningful to the students as some of the others in this booklet. Guest speakers who have experience with erosion/irrigation issues locally or internationally would help bridge the interest gap. The book "50 Things Kids Can do to Save the Earth" has a section on water conservation.

### STUDENT ACTIVITIES

Articles 1-2. Soil Erosion (pp. 22-24)

Identify and describe the major causes of erosion and then brainstorm solutions to these causes.

Articles 3-4. Irrigation(pp. 24-25)

Brainstorm the positive and negative impacts of irrigation.

Imagine you are hired to look at the problems of water shortage in the Third World. Prepare a proposal which asks for Western aid in helping to overcome these issues.

### ADDITIONAL ACTIVITIES

1. Monitor your water use in a day. Shower with the plug in. Brush your teeth saving the water in a cup. Monitor what you drink and use. Add these totals. Comment in journal form on your results. Try to cut your consumption in half the next day. Add to your journal. What did you notice about your water consumption? How do you think it compares with someone in the Third World?

2. Is it too easy for us to use water? Should we have to work for our water (carry it or pump it by hand)? Analyze this in an essay.

3. Debate: Should we in Canada conserve water? Should we share our resources with others?

4. List all the ways your family uses water in a day. Remember lawn sprinkling, washing cars, clothes, etc. Priorize your uses of water from the most important to least important. In what areas might you cut down?

5. Phone your municipality to get a breakdown of ingredients in the city water. How is it treated and why? Also, find out how the municipality does a coliform count and how the city disposes with sewage and how much is created each day. Prepare a poster or bulletin board to inform the class about your findings.

6. Ironically, Canada has an abundance of water. Research the issue of exporting water (especially to the United States).

# AGRIBUSINESS:
## FROM THE GREEN REVOLUTION TO BIOTECHNOLOGY

### TO THE TEACHER

The shift from farming as food source to farming as business is essential to understanding the food inequalities today. The purpose of this section is to examine the "business" aspects of food and their effects on the earth. Before the students read the articles, try to "sell" the Green Revolution as though it is new for the 90s. Tell them to imagine they are peasant farmers in a developing country and they are being offered an experiment. Provide them with information about the technology they will receive if they sign up. After a discussion and vote on whether to adopt the new ideas, project a list of possible dangers to this technology as an introduction to this section.

### STUDENT ACTIVITIES

Article 1. *The Age of Industrial Food* (p. 26)

Prepare a flow chart which shows how the demand for inexpensive food perpetrates the age of industrial food.

Reflect and respond to the questions at the end of this article.

Article 2. *Agribusiness* (p. 27)

Read this article and explain the terms "value-adding", "risk management" and "vertical integration". Explain how the agribusiness industry is perpetuated.

Read the two articles and complete a food diary for one day, listing the items you eat from least processed to most processed. How do you participate in agribusiness?

Brainstorm the uses for a potato. Come up with as many potato products as you can. List in order of least processed to most processed. You may need to take a trip to the grocery store.

On a world map, indicate where the foods you eat in a day come from and where they are processed. (Note: These are often two different places.) Include a list of foods.

Article 3. *The Green Revolution in the Punjab* (p. 28)

The author lists six negative effects of the Green Revolution. Identify them and explain the results of each.

Article 4. *Beyond the Green Revolution* (p. 32)

The author suggests several changes in ideas about agriculture since the Green Revolution. Prepare a poster or diagram that shows how things were done during the Green Revolution and how the author suggests they should be done now.

Article 5. *Farmers who Cultivate Diversity* (p. 33)

Role play or script a conversation between two farmers, one of whom grows uniform crop varieties and one who is trying to diversify.

Articles 6-7. Toxic Pesticides (pp. 35-36)

In a paragraph, summarize one of these articles.

Write a letter to the editor of the newspaper, responding to the articles you have read.

### ADDITIONAL ACTIVITIES

**"What can we do to cultivate diversity in foods?"**

1. Write an article pretending you are in the year 2012 and examining the effects of biotechnology. Has it been a success? Failure? Why? Include interviews or cartoons.

2. Why did the Green Revolution fail? Discuss in groups and report to the class.

3. Create a "panel discussion" on the topic "Playing with Nature: Good or Bad?"

# DIET

## TO THE TEACHER

The most effective way to show the disparities between First and Third World diet is to have students experience the contrast themselves. A Third World Food Day, 24 Hour Fast and other activities help to bring home these concepts. Following are statements which can be used for discussion, debate or essay topics before, during or after these readings.

Many Westerners are overweight while most of the world is struggling to survive.

We produce enough food to feed all the world's inhabitants, yet 40,000 children die each day of hunger.

We have more food than we need, more selection than we need and still new consumer products are coming on the shelves.

If an alien landed on earth and wanted to learn about the food inequalities, how might you explain the situation?

Changes in food consumption and distribution should be legislated by governments.

## STUDENT ACTIVITIES

Article 1. *What Canadians are Eating* (p.37)

Compare what you eat in an average day to the Canadian statistics found in this article. How are you similar and different? Talk to your parents and grandparents. How have their eating habits changed? Do they correspond with the article?

Look on the grocery store shelves at a product like breakfast cereals. How many brands are there? What are their nutritional claims? What ingredients turn up most often? Come up with some other research questions and prepare a presentation on your findings.

Make a list of your ten favourite foods. How often do you eat them? What are the similarities between them? Are they heavily processed or fresh? Are they nutritional or "junk" food? Analyze why you like them and how your diet would change if you didn't have them.

Article 3-5. Vegetarianism vs. Meat Eating (pp. 40-43)

Create a board game using statistics from these articles.

Prepare a brochure or bulletin board on how to eat "green".

Test your family and friends on their food knowledge.

Make a chart or poster showing the pros and cons of meat-eating.

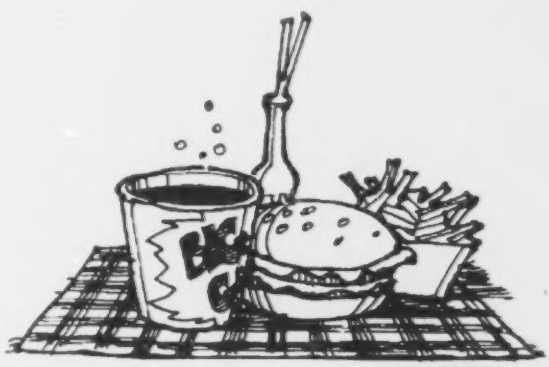
## ADDITIONAL ACTIVITIES

1. These articles have different points of view. What contradictions can you find between them? Identify strengths and weakenesses in the arguments. Which of the articles presents the best case?

2. Role play a discussion between a beef farmer and a member of Earthsave.

3. Debate the pros and cons of meat eating.

4. Make up a Grocery Store Treasure Hunt for your classmates that will enable them to find out some surprising information about the food we eat.



Africa File, VIDEA

## FOOD FROM SEA

### TO THE TEACHER

Some of these articles are international and others national in scope. Most of the activities deal with Canadian issues since overfishing and quotas are currently a big issue. A guest speaker who is involved in the fishing industry would help to show students how critical this problem is. The following role-play will also help to show the complexity of the issue.

Role play

a. Divide class into groups and assign the following role: fisherpeople, government officials, fish plant operators, environmentalists, town merchants/bankers, marine biologists and reporters.

b. Explain the scenario. All the groups live in a small fishing town on the east coast of Canada. The government has announced they are cutting the cod quotas in half for the upcoming season. A town meeting has been called so each stakeholder group can explain their position and a plan of action can be found.

c. Divide the class into their interest groups and give them time to plan their presentation. The reporters circulate, asking questions and trying to find out the positions of each of the interest groups. They also run the meeting.

d. At the town meeting, a representative from each of the groups presents their arguments. The reporters may ask clarification questions. Once the presentations are complete, other panel members and the audience may ask questions.

e. Once the positions have been stated and everyone has heard others' viewpoints, the class together develops plans of action on which all interest groups agree. How can a "win-win" situation occur?

### STUDENT ACTIVITIES

Article 2-3. Cod Stock Depletion (pp. 45-46)

These two articles express very different viewpoints on what is hurting fish stocks in Atlantic Canada. Describe on what points they agree and disagree and propose some reasons why they might have different viewpoints. How might you find out the "real" facts?

## HUNGER IN CANADA

### TO THE TEACHER

Because this is a local issue, the activities work best with exposure to the realities in the community. Ongoing food drives, collections or other involvement with local food organizations after the unit is finished will help students feel empowered. Visits to food banks, speakers about the issue and other liaisons with the community would add enormously to this section.

### STUDENT ACTIVITIES

Articles 1-3. Food Banks (pp. 47-49)

Read these articles as a section

Collect food as a class and take it to your local food bank.

Role play a scenario of a person forced to use a food bank for the first time.

Write a diary entry from the point of view of a person who uses a food bank.

Invite a guest speaker from your local food bank. Prepare questions to ask your guest.

Role play an interaction between a business person and a panhandler.

Role play an interaction between a person on welfare and a person with a job

Make a list of new information you found out reading these articles and compare this to the beliefs you had before you read the articles. (How many people use food banks, education level, etc)

**"I never realised how many food banks there are in Canada!"**

The Africa File. VIDEA

# THE CANADIAN FARM/FREE TRADE

### TO THE TEACHER

The issues facing our farmers seem to be in the news nightly. Have students keep a journal of the newspaper and TV reports on our debate over free trade and how it affects Canadians. Use these reports as a basis for class discussion.

*Canada and the World*, December 1991

### STUDENT ACTIVITIES

Articles 1-3. Canadian Farms (pp. 51-53)

Read these articles as a section

Do some research on free trade, focussing on the Canada/US/Mexico deal. What are the issues? What do you think of the deal?

Invite a guest speaker on free trade. Prepare questions for your visitor.

Complete the "Suggested Activities" at the end of the article "Plowed Under".

Pretend you are a farmer who is close to bankruptcy. Write a letter to consumers explaining your predicament.

Using the facts given in these articles, explain what will happen as more farmers go out of business.

Debate: "Should consumers pay more for products?" "Should the government give more money to the farmers?"

# IRRADIATION

### TO THE TEACHER

The issue of irradiation is significant today, but very little good information seems to be around. The questions at the end of the article "Food Irradiation: Who Profits? Who Loses?" could be assigned to groups for research. The groups would then be responsible for reporting to the class on their findings.

### STUDENT ACTIVITIES

Article 1-3. Food Irradiation. (pp. 54-56)

Read these articles as a section

Read articles and identify the points of view about irradiation.

Find out if as Canadians we are eating irradiated food. Is it imported or do we irradiate food in Canada? Is there a symbol on the food that identifies it as irradiated?

Make up a test for your classmates based on the information in these articles.

Write a newspaper article from someone in the year 2012 who is looking back at the issue of irradiation. Was it a "wonder industry" or a failure?

## WOMEN AND AGRICULTURE

### TO THE TEACHER

Many are under the misconception that men are primarily responsible for food production in the third world. These articles stress the positive role that women play. An introductory activity could revolve around the traditional denigrating of women's roles in history. Ask students to brainstorm the people who have made a significant contribution to the world and discuss how many are women.

### STUDENT ACTIVITIES

Articles 1-3. Women farmers (pp. 57-59)

Comment on the following statistics:

**Women around the world:**

- Work two-thirds of all the hours of labour in the world — on average 10 to 16 hours per day
- make up 50 to 90 per cent of the agricultural labour force in developing countries
- earn one-tenth of the world's income
- own 1% of the world's property

Do a day in the life story or diary for a woman in the Third World.

Collect statistics from these readings and display in visual form.

Article 4. Land Tenure (p. 61)

Describe how land was traditionally divided in Africa, India, Latin America, Asia and Canada and how that has changed over the years.

## ALTERNATIVES & SOLUTIONS

### TO THE TEACHER

This section contains articles which explore what people are doing to face some of the food issues explored in this booklet. It is important to look at the positive steps people are taking in the world.

### STUDENT ACTIVITIES

Article 1-7. Solving Hunger (pp. 63-70)

Read these articles as a section

Do a case study to find out more information about a country of your choice. What food-related problems do they face? What are they doing to combat the problem?

Why aren't these "good news" pieces on the TV news? Do we focus on the negative too much? Find a collection of "good" news for a bulletin board.

Do a formal survey of your family and friends. How far will they go to help solve the earth's food problems? Make up questions to explore this issue.

Oraganize a Food Awareness Day in your class.

Make a recipe book of "green" recipes and ideas.

Visit a health food store. Find out what products are available to encourage people to buy "green".

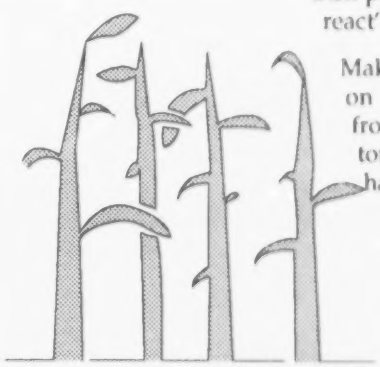
Visit an organic and non-organic farm. What are the differences? Why have people chosen to farm the way they have?

Make a chart indicating the "hidden" costs we pay for food (environmental, social, etc)

Discuss the statement "People react to their pocketbook; if it costs then they'll react".

Make a video or news show based on information you have learned from this booklet. Interviews, editorial, comments, etc would enhance your presentation.

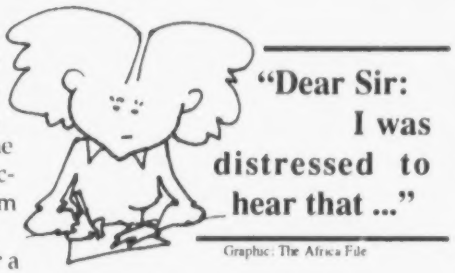
**"No pesticides, no fertilizers...**
**ORGANIC,**
**at last!**



Creating Our Common Future, CPPNW

# WRITING EFFECTIVE LETTERS

It is said that for every letter received by an M.P. or M.L.A. there are another 100 constituents who share a concern on the same issue. Elected officials do pay attention to letters and they do have an impact. For example, letter writing campaigns in the Prairie Provinces in the 1970s formed part of a successful strategy for increased development aid from the provincial governments.



Graphic: The Africa File

Letter writing is a very concrete action item for a group. You can plan a joint letter writing session at the end of a development education program. You can hold a "letter writing day", in which you invite all your members, friends, neighbors and their children to a meeting hall to write letters. Set up different writing stations with lots of paper, pens, envelopes, and sample letters. Set up stations for children as well ... they can add their drawings and letters too! Make it a fun event by providing background music and coffee and refreshments. Think of creative letter ideas: write them on papier mache characters (hogs? doves? mice?), inside a large outline of a character or picture such as a cutout of people working together, or make a collage of letters. The releasing of a large number of colored balloons with letters attached (you can photocopy one letter, addressed "To Canada") can provide a very symbolic gesture at the closing of a letter-writing day.

Build a letter-writing campaign by asking different groups of people to write letters (such as your church group, or NGO members, or social group). Time the campaign so that large amounts of mail would arrive at the official's desk on certain days. Change the text of the letter for the subsequent letters.

Here are some tips for effective letters to public officials:

1. Limit each letter to a single issue, keep it brief and to the point.
2. Make your letter personal. Tell of any personal involvement you have in the issue and state why you are personally advocating a particular position. Point up any moral factors involved in the issue.
3. Identify any organization to which you belong which has taken an official stand or some action on the issue. Reiterate the stand or quote the official statement or resolution.
4. Let the receiver of the letter know that you are concerned and informed. Be positive.
5. Point out concerns you have around the issue or criticisms of the stand or actions the legislator or the party or the government has taken.
6. End the letter with a question that needs a reply; requesting information from the legislator or requesting his opinion, stand, or past action on the issue.
7. Respond to the reply with another question and more concerns or criticisms.

**Forms of Address for Canadian Government Officials:**

The Governor General
Her/His Excellency _____
Government House
Ottawa

The Prime Minister of Canada
The Right Honourable _____
House of Commons
Ottawa, K1A 0A6

Member of the Cabinet
The Honourable _____
House of Commons
Ottawa, K1A 0A6

Member of Parliament
_____, M.P.
House of Commons
Ottawa, K1A 0A6

Member of the Senate
The Honourable _____
The Senate
Ottawa

The Lieutenant-Governor of (a Province)
His/Her Honour _____
Government House
Capital City, Province

Premier of a Province
The Honourable _____, M.L.A.
Legislative Assembly
Capital City, Province

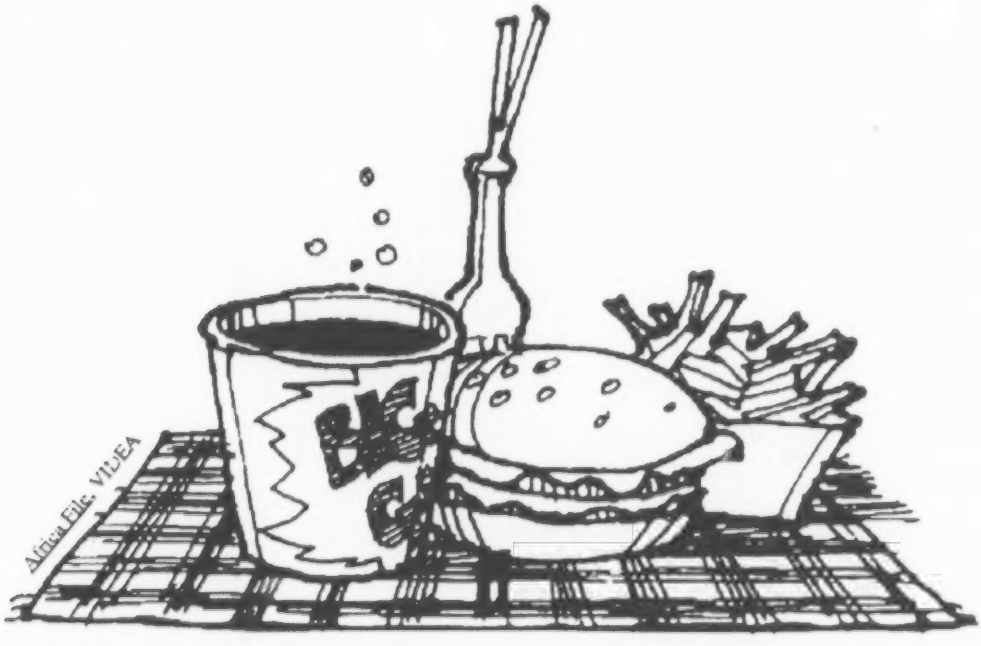
Member of a provincial government
_____, M.L.A.
Legislative Assembly
Capital City, Province

Reprinted from *Basics and Tools. Basics and Tools: A Collection of Popular Education Resources and Activities* was published by CUSO in Ottawa in 1988.

# The Food Scrapbook

This newly updated reading kit presents a scrapbook of selected articles from over 25 journals and periodicals from around the world. The material is current, concise and balanced in viewpoint. The scrapbook also contains a new section of teaching activities and ideas. All materials in the scrapbook are copyright approved for photocopying for classroom use.

The **Food Scrapbook** covers such topics as: what is hunger?; famine; cash crops; agribusiness; diet; food from the sea; the Canadian farm; women and agriculture; alternatives and solutions; and more!




## VIDEA

**(Victoria International Development Education Association)**

VIDEA is an International Development learner centre located is Victoria, B.C. Since 1977 it has carried out a variety of programs designed to create a greater awareness of global issues. VIDEA has developed a wide range of global education materials for schools. For more information or for a free copy of VIDEA's **Global Education Resources Catalogue**, contact VIDEA, 407 - 620 View Street, Victoria, B.C., Canada V8W 1J6 (604) 385-2333.

### Global Issues Reading Kits

**This scrapbook is one in a series of reading kits. The complete series is:**

**Kit #1 - The Environment**
**Kit #2 - The Food Scrapbook**
**Kit #3 - The Urbanization Scrapbook**
**Kit #4 - The Economics Scrapbook**
**Kit #5 - The Population Scrapbook**